

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF WISCONSIN  
GREEN BAY DIVISION**

APPLETON PAPERS INC. and	)	
NCR CORPORATION,	)	
	)	
Plaintiffs,	)	
v.	)	No. 08-CV-16-WCG
	)	
GEORGE A. WHITING PAPER COMPANY,	)	
ET AL.,	)	
Defendants.	)	

---

NCR CORPORATION,	)	
	)	
Plaintiff,	)	
v.	)	No. 08-CV-0895-WCG
	)	
KIMBERLY-CLARK CORPORATION,	)	
ET AL.,	)	
Defendants.	)	

**PLAINTIFFS' [PROPOSED] FINDINGS OF FACT AND CONCLUSIONS OF LAW**

Pursuant to Civil L.R. 56.2(a) of the United States District Court for the Eastern District of Wisconsin, Plaintiffs NCR Corporation and Appleton Papers Inc. respectfully submit the following [proposed] findings of fact, all of which are undisputed, in support of their September 30, 2009, Pleadings, filed herewith.

**I. BACKGROUND INFORMATION ON, AND EARLY TESTING OF, PCBS.**

1. Monsanto was the sole U.S. producer of Aroclors. Roach Decl., Ex. 1 [July 17, 1975 WDNR Progress Report (NCR-FOX-0162508)].

2. Aroclors are a series of chlorinated hydrocarbons. Roach Decl., Ex. 2 [Monsanto Salesmen's Manual (MONSFOX00092612), at 1].

3. Each Aroclor had a specific percentage of chlorination and generally was named based on that percentage (for instance, Aroclor 1242 received its name because it contained 42 percent chlorine, and Aroclor 1254 received its name because it contained 54 percent chlorine). Roach Decl., Ex. 2 [Monsanto Salesman's Manual (MONSFOX00092612), at 1].

4. Aroclors were used in a wide variety of industrial and commercial applications, including paints, inks, varnishes, waxes, lacquers, lubricants, hydraulic fluids, rubber, thermostats, textiles, and coatings in swimming pools and water tanks. Roach Decl., Ex. 2 [Monsanto Salesmen's Manual (MONSFOX00092612), at 20-40].

5. Prior to 1966, no studies were conducted on the effects of Aroclor in the environment.

6. Limited health effects studies were performed on PCBs in the 1930s and 1940s, which studies often included chlorinated biphenyls and naphthalenes. Roach Decl., Ex. 3 [Aug. 6, 2009 Rebuttal Report of M. Williams, at 12, n.17].

7. Some of the studies performed on PCBs in the 1930s and 1940s identified chloracne and liver effects during certain work place exposure routes and certain exposure levels, however the results were not definitive for PCBs because the exact compound or set of compounds was not accurately determined. Roach Decl., Ex. 3 [Aug. 6, 2009 Rebuttal Report of M. Williams at 12, n.17].

8. These early studies of PCBs were summarized in September 1972 as follows: "Although there were sporadic reports during the 1930s and 1940s in the industrial medical literature of toxic effects of PCBs and of mixtures containing PCBs, they were not generally

regarded either as hazardous chemicals or as potential environmental contaminants.” Roach Decl., Ex. 4 [Panel on Hazardous Trace Substances (NIEHS), “PCBs – Environmental Impact,” Environmental Research, September 1972 (NCR-FOX-0578310)].

9. Monsanto sales manuals, internal memoranda and letters to customers prior to 1971 all stated that Aroclors did not represent industrial toxicological problems at ordinary temperatures. Roach Decl., Ex. 5 [November 30, 1950 Letter from Monsanto to American Smelting & Refining Co. (NCR-FOX-0575146)]; Ex. 6 [April 10, 1962 Letter from Monsanto to St. Clair Shores Fire Department (NCR-FOX-0575354)]; Ex. 7 [May 6, 1964 Letter from Monsanto to Raytheon Company (NCR-FOX-0575378)]; Ex. 8 [May 19, 1969 Letter from Monsanto to PPG Industries (NCR-FOX-0575886)]; Ex. 9 [July 23, 1969 Letter from Monsanto to New Jersey Department of Conservation and Economic Development (NCR-FOX-0575899)].

10. Monsanto’s recommendations regarding work place exposure to Aroclor included: (1) at elevated temperatures, removal of vapors from the workplace using local exhaust ventilation; and (2) avoiding prolonged breathing of Aroclor vapors or mists and direct skin contact (due to risk of irritation, not possible toxicity). Roach Decl., Ex. 5 [November 30, 1950 Letter from Monsanto to American Smelting & Refining Co. (NCR-FOX-0575146)]; Ex. 7 [May 6, 1964 Letter from Monsanto to Raytheon Company (NCR-FOX-0575378)]; Ex. 8 [May 19, 1969 Letter from Monsanto to PPG Industries (NCR-FOX-0575886)]; Ex. 9 [July 23, 1969 Letter from Monsanto to New Jersey Department of Conservation and Economic Development (NCR-FOX-0575899)].

11. However, Monsanto repeatedly stated there was no hazard concern from occasional short-term skin exposure to Aroclors or Aroclor vapors. *See, e.g.,* Roach Decl., Ex. 7

Ex. [May 6, 1964 Letter from Monsanto to Raytheon Company (NCR-FOX-0575378)]; Ex. 8 [May 19, 1969 Letter from Monsanto to PPG Industries (NCR-FOX-0575886)].

12. Monsanto arranged for testing on the acute toxicity of PCBs and determined that they were not acutely toxic. Roach Decl., Ex. 10 [November 10, 1953 Certificate of Analysis from Scientific Associates (MONSFOX00061898)]; Ex. 11 [December 11, 1953 Certificate of Analysis from Scientific Associates (NCR-FOX-0575151)].

13. Monsanto visited CCP manufacturing facilities in 1953 and 1954 and understood the manufacturing process for CCP and NCR's use of Aroclor 1242. Roach Decl., Ex. 12 [Dec. 7, 1953 NCR Impact Printing Report (NCR-FOX-325163)]; Ex. 13 [Apr. 28, 1954 Mead Research Laboratories Report (MONSFOX00000300)].

## **II. THE DEVELOPMENT OF CARBONLESS COPY PAPER ("CCP") AND NCR CORPORATION'S TESTING OF AROCLOR 1242.**

14. In the mid-1950s, NCR Corporation ("NCR") developed a paper system – the CCP brand of carbonless copy paper ("CCP") – that could make multiple copies without the use of carbon paper. Roach Decl., Ex. 14 [June 5, 2009 Report of W. Moore at 8].

15. CCP consisted in its simplest form of two overlain sheets, each with a special coating. Roach Decl., Ex. 14 [June 5, 2009 Report of W. Moore at 8].

16. The top sheet, called "Coated Back," was coated on its backside with a thin layer of microscopic capsules, which capsules contained colorless ink, oils, and a transfer solvent. Roach Decl., Ex. 14 [June 5, 2009 Report of W. Moore at 8]; Ex. 15 [Aug. 7, 2009 Report of H. Kytomaa at 3].

17. The bottom sheet, called “Coated Front,” was coated on its face with a special clay or resin and contained no solvent. Roach Decl., Ex. 14 [June 5, 2009 Report of W. Moore, at 8]; Ex. 15 [Aug. 7, 2009 Report of H. Kytomaa at 3].

18. Pressure applied to the face of the Coated Back sheet (such as by pen, printer or typewriter key) would rupture the microscopic capsules, transferring the solvent to the Coated Front sheet below, where it would react with the special clay or resin on the Coated Front sheet to form an image identical to the image printed or written on the Coated Back sheet. Roach Decl., Ex. 14 [June 5, 2009 Report of W. Moore at 8]; Ex. 15 [Aug. 7, 2009 Report of H. Kytomaa at 3].

19. A solvent was required to hold the ink in suspension inside the microcapsules. Roach Decl., Ex. 16 [P. Phillips Dep. at 69:2-14]; Roach Decl., Ex. 17 [June 4, 2009 Report of M. Williams at 12].

20. Aroclor 1242 was the only type of PCB ever used in CCP. Roach Decl., Ex. 17 [June 4, 2009 Report of M. Williams at 12].

21. NCR’s Research Group tested many kinds of materials for potential solvents, including virtually all of the PCB Aroclors manufactured by Monsanto. Roach Decl., Ex. 17 [June 4, 2009 Report of M. Williams at 38].

22. Monsanto and NCR engaged in testing of Aroclor 1242 to determine if it would be safe to use in the emulsion for CCP from a health and workplace safety perspective. Roach Decl., Ex. 12 [Dec. 7, 1953 Impact Printing Report (NCR-FOX-0325163)]; Ex. 17 [June 4, 2009 Report of M. Williams, at 38].

23. After workplace air levels were tested and found to be below the recommended 8-hour workplace standard, Monsanto informed NCR that, “Aroclor does not have cumulative effects and does not cause liver damage. They [Monsanto] do not believe that there is an industrial hazard caused by our use of Aroclor or Formaldehyde under normal conditions.” Roach Decl., Ex. 12 [Dec. 7, 1953 Impact Printing Report (NCR-FOX-0325163)].

24. NCR also contracted with Hill Top Research Institute, Inc., an independent laboratory, for toxicology testing and allergenic studies on PCB-containing CCP. *See, e.g.*, Roach Decl., Ex. 18 [Oct. 10, 1955 Hill Top Research Report to NCR (APIFOX00032939)]; Ex. 19 [Aug. 8, 1958 Hill Top Research Report to NCR (JDGFOX00001319)]; Ex. 20 [Nov. 12, 1958 Hill Top Research Report to NCR (JDGFOX00001333)].

25. A November 1958 study performed by Hill Top Research Institute Inc. concluded, “No chronic or cumulative toxic effects would be expected to occur in humans handling the NCR paper forms daily.” Roach Decl., Ex. 21 [Nov. 12, 1958 Hill Top Research Report to NCR (NCR-FOX-477426) at 6].

26. Plaintiffs’ expert Elizabeth Anderson concluded that, prior to 1971: “[T]he extent of testing shows that NCR was being conscientious by trying to fully understand the potential hazards associated with its products, including CCP and its various components such as Aroclor 1242.” Roach Decl., Ex. 22 [Aug. 7, 2009 Report of E. Anderson at 15].

27. Plaintiffs’ expert Marcia Williams has opined, “in the 1950s when NCR decided to utilize Aroclor 1242 as a solvent for its CCP emulsion, neither regulations nor knowledge would suggest any concern with the use of PCBs in this application.” Roach Decl., Ex. 17 [June 4, 2009 Report of M. Williams, at p. 39].

### **III. THE PROCESS OF MAKING AND SELLING CCP.**

28. From the time it was first commercially sold throughout the 1970s, CCP was used primarily in multi-page forms used in offices and businesses. Roach Decl., Ex. 14 [June 5, 2009 Report of W. Moore at 8].

29. In the United States, emulsion for CCP was produced by NCR and sold to licensees, which made the coating, applied the coating on paper, and sold finished CCP back to NCR. Roach Decl., Ex. 15 [Aug. 7, 2009 Report of H. Kytomaa, at 3].

30. Appleton Coated Paper Company (“ACPC”) sold emulsion-containing paper trimmings (“broke”) generated during the production of CCP to brokers, who then sold the broke to paper recycling mills. Roach Decl., Ex. 23 [F. Heinritz Dep. 20:15-20, 28:18-21].

31. In Europe, NCR licensed Wiggins-Teape to produce CCP at two facilities in England and one in Belgium. Def. Prop. Findings of Fact at ¶¶ 25, 26.

32. Wiggins-Teape was licensed to (and did in fact) sell CCP. Roach Decl., Ex. 24 [Sep. 18, 2009 G. Vichare Dep. at 87:17-21].

33. ACPC was not licensed to sell CCP. Roach Decl., Ex. 24 [Sep. 18, 2009 G. Vichare Dep. at 87:17-21].

### **IV. THE PUBLICATION OF SILENT SPRING DEALING WITH DDT.**

34. The first part of Rachel Carson’s *Silent Spring* was published in the *New Yorker* in 1962. See PJF Decl. at Ex. 13 [*Silent Spring* Excerpt].

35. *Silent Spring* focused on pesticides that were applied directly and intentionally into the ground, plants and water bodies to kill pests. Roach Decl., Ex. 3 [Aug. 6, 2009 Rebuttal Report of M. Williams, at 47].

36. The chemical properties of DDT and Aroclor 1242 do not suggest that these two chemicals would have similar toxicities or environmental effects. Roach Decl., Ex. 22 [Aug. 7, 2009 Report of E. Anderson at 39-46]; Ex. 25 [J. Herbig Dep. at 244:11-14].

37. While pesticides had chemical similarities to PCBs, they also had chemical similarities to hundreds – and possibly thousands – of other chemicals in use. Roach Decl., Ex. 3 [Aug. 6, 2009 Rebuttal Report of M. Williams, at 47].

38. There are differences between DDT and Aroclor 1242 – both in terms of the manner in which they were used and the adverse effects they cause – and so there is no reason to believe that they would act similarly in the environment. Roach Decl., Ex. 22 [Aug. 7, 2009 Report of E. Anderson at 39-46]; Ex. 26 [H. Vodden Dep. at 113:6-13]; Ex. 25 [J. Herbig Dep. at 244:11-14].

39. John Stutz testified that any connection between DDT and PCB was “speculation” on his part and that this “speculation” did not even come to his mind until the time he was “looking for a replacement for Aroclor” (which he testified was in the late 1960s). Roach Decl., Ex. 27 [J. Stutz June 18, 2009 Dep. at 71:24-72:7, 82:3-84:6].

40. NCR only experimented with encapsulating DDT for at most “a couple days,” and this was done by a research group that had absolutely no involvement with CCP. Roach Decl., Ex. 25 [J. Herbig Dep. at 26:21-27:17; 243:13-244:14].



**V. THE PUBLICATION OF THE JENSEN REPORT AND RESPONSES FROM MONSANTO AND NCR.**

41. In 1966, Swedish scientist Soren Jensen presented findings suggesting for the first time that some PCBs persisted in the environment. Roach Decl., Ex. 28 [Dec. 15, 1966 New Scientist Article (MONSFOX00003427)].

42. Prior to the publication of Jensen article, no one made any connection between DDT and PCB. Roach Decl., Ex. 22 [Aug. 7, 2009 Report of E. Anderson at 39-46]; Ex. 29 [J. Rodricks Dep. at 148:12 – 149:19].

43. In 1967, Monsanto forwarded to NCR a copy of a rendition of a lecture on PCBs given by Jensen. PJF Decl., Ex. 24 [Feb. 27, 1967 Letter from Kelly to Thomas, attaching copy of lecture (GNCR0000013), also (JDGFOX00000037)].

44. Defendants' expert, Joseph Rodricks, testified that, prior to 1967, there was no knowledge of risk that PCBs could bioaccumulate. Roach Decl., Ex. 29 [J. Rodricks Dep. at 23:3-24:21].

45. It is well-recognized by the scientific community that a single, uncorroborated scientific study is not a basis on which to draw final conclusions. Roach Decl., Ex. 22 [Aug. 7, 2009 Report of E. Anderson at 31].

46. In 1967, NCR began to investigate Jensen's findings and sought additional information from Monsanto. Roach Decl., Ex. 30 [February 10, 1967 Monsanto Memorandum (MONSFOX00097886)].

47. In connection with providing a copy of that lecture, Monsanto stated its belief that the analytical issues as to the compound identified by Jensen were still uncertain. PJF Decl., Ex. 24 [Feb. 27, 1967 Letter from Kelly to Thomas, attaching copy of lecture (JDGFOX00000037)]; Ex. 3 [Aug. 6, 2009 Rebuttal Report of M. Williams at p. 24].

48. Monsanto also questioned whether the PCBs found in the environment by Jensen were Aroclors or some other type of PCB and whether the levels found in the environment were significant from a toxicological standpoint. PJF Decl., Ex. 24 [Feb. 27, 1967 Letter from Kelly to Thomas, attaching copy of lecture (JDGFOX00000037)]; Ex. 3 [Aug. 6, 2009 Rebuttal Report of M. Williams at p. 24].

49. Monsanto informed NCR that it would investigate Jensen's procedures and findings. In following up with Monsanto in a March 1967 letter, NCR wrote, "Your conclusions and plan of approach to define more precisely the identification of the particular chlorinated compounds would be most appreciated." Roach Decl., Ex. 31 [Mar. 10, 1967 Letter from M.J. Thomas (PHGNCR-2007078)].

50. As late as March, 1969, Monsanto was still wondering whether the "PCBs" found by Jensen and in later California studies were actually PCBs, or were rather some other compounds, which, as a result of "the metabolism of other materials in the marine environment," only appeared to be PCBs. Roach, Decl., Ex. 32 [Mar. 3, 1969 Monsanto Memorandum, attaching Press Release (MONSFOX00097467) at 3 of press release, stating "This raises the question of whether the substances identified in the Swedish work, and now in California, are actually PCBs – or whether they are compounds which, due to the metabolism of other materials in the marine environment, appear to be PCBs."].

51. Prior to the early 1970s, the existence of limited data suggesting that PCBs could result in adverse chronic health effects during certain workplace exposure situations did not equate to knowledge that the compound would be an environmental contaminant. Roach Decl., Ex. 33 [Oct. 1970 Gustafson Article, “PCBs – Prevalent and Persistent” (NCR-FOX-0576274)].

52. Chemical users and the government routinely rely upon chemical manufacturers for information regarding potential risks to workers and the environment associated with the manufacturers’ products. Roach Decl., Ex. 3 [Aug. 6, 2009 Rebuttal Report of M. Williams, at 29].

53. Monsanto, as the manufacturer of all PCBs sold in the United States, was in the best position to evaluate any scientific evidence relating to PCBs. *See* Roach Decl., Ex. 3 [Aug. 6, 2009 Rebuttal Report of M. Williams, at 29-30].

54. It is reasonable for a purchaser of a chemical to rely on statements made by the manufacturer regarding its potential adverse effects. Roach Decl., Ex. 29 [J. Rodricks Dep. at 27:19-28:1].

55. As late as 1969, Monsanto informed numerous governmental entities that it would not expect to find PCBs in the environment in a widespread manner. Roach Decl., Ex. 34 [March 24, 1969 Letter from Monsanto to Los Angeles County Air Pollution Control District (NCR-FOX-0575881)]; Ex. 35 [March 27, 1969 Letter from Monsanto to State of California Resources Agency (NCR-FOX-0575882)]; Ex. 36 [May 26, 1969 Monsanto Memorandum (NCR-FOX-0575888) (recounting conversation with representative of National Air Pollution Control Administration)]; Ex. 37 [July 23, 1969 Monsanto Letter to New Jersey Department of Conservation and Economic Development (NCR-FOX-0575899)].

56. In 1969, Monsanto said it was still performing research on PCBs and customer uses of PCBs in an effort to understand the mechanisms that would result in the widespread environmental presence of PCBs. *Id.*

57. In a July 23, 1969 letter to the New Jersey Department of Conservation and Economic Development, Monsanto stated, “We are unable at this time to conceive of how the PCBs can become wide spread in the environment. It is certain that no applications to our knowledge have been made where the PCBs would be broadcast in the same fashion as the chlorinated hydrocarbon pesticides have been.” Roach Decl., Ex. 37 [July 23, 1969 Monsanto Letter to New Jersey Department of Conservation and Economic Development (NCR-FOX-0575899)].

58. In the same July 23, 1969 letter, Monsanto stated, “Based on available data, manufacturing and use experience, we do not believe the PCBs to be seriously toxic.” *Id.*

59. Soren Jensen similarly wrote in 1969: “Little is known about the toxicity of PCB in the levels found by us.” Roach Decl., Ex. 38 [Oct. 18, 1969 Article (MONSFOX00083166)].

60. Two Wisconsin researchers reported in 1970 that “[t]he toxicity and sublethal effects of the chlorinated biphenyls to biological systems has not been thoroughly examined” and that further investigations are needed before “control measures can be considered.” Roach Decl., Ex. 39 [Veith & Lee, April 1970 Report, “A Review of Chlorinated Biphenyl Contamination in Natural Waters,” (NCR-FOX-0616228) at p. 3].

61. Additional studies published regarding PCBs between 1967 and 1972 either did not identify the types of PCBs being found in the environment or did not indicate that Aroclor

1242 was being found. Roach Decl., Ex. 17 [June 4, 2009 Report of M. Williams at 25]; Ex. 40 [1976 Fort Howard PCB Report (Ex. 114 to the Deposition of D. DeMeuse), at 15 (stating “Enclosed as a reference section to this report are many articles detailing PCBs in various wildlife forms. In all cases, however, the PCB’s detected are not Aroclor 1242, but rather the higher chlorinated compounds.”)].

62. Those studies published regarding PCBs between 1967 and 1972, that specifically identified the type of PCB being found did not identify Aroclor 1242, but instead identified only the higher-chlorinated Aroclors. Roach Decl., Ex. 17 [June 4, 2009 Report of M. Williams at 25]; Ex. 40 [1976 Fort Howard PCB Report (Ex. 114 to the Deposition of D. DeMeuse), at 15 (stating “Enclosed as a reference section to this report are many articles detailing PCBs in various wildlife forms. In all cases, however, the PCB’s detected are not Aroclor 1242, but rather the higher chlorinated compounds.”)].

63. No study that was published prior to 1972 ever found that Aroclor 1242 persisted in the environment, or otherwise suggested that Aroclor 1242 entered the food chain from discharges or otherwise posed risk of environmental harm. Roach Decl., Ex. 29 [J. Rodricks Dep. at 152:7-15].

64. Monsanto had a business interest in not sharing all available information with NCR, as Monsanto documents and witnesses made clear that Monsanto would have lost business if NCR had stopped using PCBs in its emulsion before Monsanto was able to develop a satisfactory substitute. PJF Decl., Ex. 26 [March 12, 1969 Monsanto Memorandum (PHGNCR-2007044) discussing the potential business impact of adverse publicity regarding Aroclors, and specifically referring to a potential shift of customers away from using PCBs as being the worst

thing that could happen]; Roach Decl., Ex. 26 [H. Vodden Dep. at 89:19-90:2]; Ex. 3 [Aug. 6, 2009 Rebuttal Report of M. Williams, at p. 28].

65. Internal Monsanto memoranda also make clear that NCR was seeking a replacement for Aroclor 1242 in order to reduce costs and odors associated with it, and that Monsanto was trying to delay this process by providing potential replacements that it did not believe would effect a change in NCR's use of PCB-containing emulsion. PJF Decl., Ex. 26 [March 12, 1969 Monsanto Memorandum (PHGNCR-2007044) stating "NCR have a research program to evaluate NCR replacements mainly because they want a non-propriety product, product with lower odor and lower cost... A year ago, we began to supply Aroclor/HB-40, Aroclor/IGM blends for evaluation by NCR not to aggressively affect a change but to keep NCR busy evaluating our products instead of the competition"].

66. As late as January 1970, Monsanto was delivering its first shipment of a higher-chlorinated Aroclor (Aroclor 1248) to a new customer, Champion Paper. Roach Decl., Ex. 41 [Feb. 9, 1970 Monsanto Memorandum (MONSFOX00098824)].

67. Champion Paper asked questions and had "doubts" about using Aroclor 1248, but Monsanto representatives discussed those doubts with Champion, including issues of pollution, and put Champion "more at ease about using" Aroclor 1248. Roach Decl., Ex. 41 [Feb. 9, 1970 Monsanto Memorandum (MONSFOX00098824)].

68. W.B. Papageorge was the Monsanto employee responsible for PCBs, particularly issues regarding the environmental aspects of PCBs, in the United States, while H.A. Vodden was one of the people responsible for such issues in Europe. Roach Decl., Ex. 26 [H.A. Vodden Dep. at 87:22-88:2]; Ex. 42 [Oct. 30, 1969 Monsanto Memorandum (Ex. 947 to Vodden Dep.)].

69. In a December 15, 1970 letter, Mr. Papageorge (of Monsanto-U.S.) wrote to Dr. Vodden (of Monsanto-U.K.) and requested that Dr. Vodden make efforts to delay the publication of a study – by scientists with the British government – naming CCP as a source of Aroclor 1242, because Mr. Papageorge was concerned that “the resulting widespread knowledge that Aroclor 1242 is involved in significant quantities in this paper application will seriously affect our situation with NCR-U.S.” Roach Decl., Ex. 43 [Dec. 15, 1970 Letter (PHGNCR-2001014)].

70. In December 1969, Monsanto communicated to NCR: “No [Aroclor] 1242 [had been] found in any environmental samples” and “none found to date in environment – we think it degrades.” Roach Decl., Ex. 44 [Dec. 16, 1969 Monsanto/NCR Meeting Notes (GPFOX00030900)].

71. Monsanto had neither determined that Aroclor 1242 was an environmental contaminant, nor that it was going to stop selling Aroclor 1242, before at least January of 1970. Roach Decl., Ex. 45 [Jan. 26, 1970 Monsanto Memo (Ex. 949 to H. Vodden Dep.) stating: “*If* in the long run, NCR paper is considered to be a pollution source,” NCR “must find an alternative to Aroclor which could be introduced *if* the Aroclor system were deemed unacceptable,” and referring to this possible switch to an Aroclor alternative as a “contingency plan.”].

72. Sometime prior to February 19, 1970, NCR told Monsanto that Monsanto should inform the British government that CCP utilized PCBs in its emulsion. Roach Decl., Ex. 46 [February 19, 1970 Monsanto Memorandum (Ex. 951 to H. Vodden Dep.) stating that NCR and Wiggins Teape “agreed that [Monsanto] should identify the N.C.R. paper application for Aroclor at [Monsanto’s] next meeting with the Ministry of Agriculture as a constructive and positive step.”].

73. A letter that Monsanto sent to all customers in February of 1970 clearly informed customers that “PCBs with a chlorine content of less than 54% [which includes Aroclor 1242] have not been found in the environment and appear to present no potential problem to the environment.” Roach Decl., Ex. 47 [February 1970 Monsanto Customer Letter (Ex. 962 to H. Vodden Dep.)].

74. In April 1970, Monsanto issued a press release stating, “Monsanto’s PCB program was initially directed at proper identification of chlorinated hydrocarbons appearing in the environment. This research, confirmed by others, *found only the higher chlorinated materials*. At the same time, Monsanto undertook animal feeding studies which show *PCB is not a highly toxic material*.” Roach Decl., Ex. 48 [Apr. 10, 1970 Monsanto Press Release (GPFOX00055242)].

75. In May 1970, Monsanto stated that PCBs found in the environment in Europe were higher chlorinated PCBs. Roach Decl., Ex. 48 [April 10, 1970 Monsanto Press Release (GPFOX00055242)].

76. In October 1971, Dr. Vodden was finding that “the significant isomers in Aroclor 1242 also degrade completely,” and that he expected his research to show that the “residues from Aroclor 1242 do not accumulate significantly.” Roach Decl., Ex. 49 [October 6, 1971 Memorandum from H. Vodden (Ex. 968 to Vodden Dep.)].

77. Defendants’ expert Joseph Rodricks concluded that no published study reported that Aroclor 1242 was bioaccumulating before 1971. Roach Decl., Ex. 29 [J. Rodricks Dep. at 32:13-17].



78. NCR did not have the technical capability to test for PCBs until at least 1971, and the evidence demonstrates that NCR's attempts to perform its own PCB testing in 1971 were unsuccessful. Roach Decl., Ex. 50 [Dec. 22, 1971 Letter from Mead to Monsanto (MONSFOX00000330) (stating, "I understand from Dr. Taylor of NCR that after several attempts by their analytical department to measure PCB concentrations in some effluent samples they decided that their zero tests were invalid and, therefore, have submitted to your laboratories for analysis.")]; Ex. 3 [Aug. 6, 2009 Rebuttal Report of M. Williams, at 21, n.52].

79. Plaintiffs' expert Williams has opined: "While information on the environmental presence of PCBs grew considerably between late 1966 and May 1971, the information available to NCR during this timeframe did not indicate that [Aroclor 1242] was an environmental contaminant." Roach Decl., Ex. 17 [June 4, 2009 Report of M. Williams, at 39].

## **VI. MONSANTO ANNOUNCES THAT IT WILL STOP SELLING AROCLOR 1242.**

80. Prior to Monsanto announcing that it was going to stop selling all PCBs, NCR became concerned that Monsanto would stop supplying Aroclor 1242 at some point. Roach Decl., Ex. 51 [Sep. 30, 2009 R. Jezerc Declaration].

81. In June 1970, Monsanto sent a letter to certain customers stating that it would stop supplying most of its Aroclors, including Aroclor 1242, for modifier and plasticizer applications effective August 30, 1970. Roach Decl., Ex. 52 [June 1970 Letter (NCR-FOX-0517895)].

82. The June 1970 letter did not specify that Aroclor 1242 had been found in the environment. *Id.*

83. Monsanto did not recall its PCB products, but instead affirmatively told customers to use their existing materials before changing to replacements. Roach Decl., Ex. 53 [Feb. 16, 1970 Monsanto Memorandum (NCR-FOX-0576082)].

84. Unlike NCR, many Monsanto customers increased their purchases of Aroclor products before the August 30, 1970 phase-out deadline. Roach Decl., Ex. 3 [Aug. 6, 2009 Rebuttal Report of M. Williams, at 44-45].

85. Monsanto continued to sell its existing stock of Aroclor 1242 and related chlorinated products until mid-1972. Roach Decl., Ex. 54 [Jan. 31, 1972 Monsanto Letter to Pydraul customers (NCR-FOX-0576743)].

86. Monsanto sold Aroclor 1242 for electrical uses until 1977. Roach Decl., Ex. 17 [June 4, 2009 Report of M. Williams at 39-40, n.100].

87. In October 1970, the U.S. Department of Agriculture announced a cancellation of PCBs used in pesticides, but allowed for a six-month transition period to allow customers to use existing supplies. Roach Decl., Ex. 55 [Oct. 29, 1970 USDA Notice 70-25 (MONSFOX00095569)].

88. NCR voluntarily stopped using Aroclor 1242 in the production of CCP by April 1971. Roach Decl., Ex. 56 [Dec. 7, 1972 Letter from Monsanto to NYDEC (GPFOX00049252)].

89. In 1971, Wiggins Teape stated “There was no evidence that we were doing anything detrimental. There is still no certainty that we were, but as soon as we became aware of doubts, we took immediate action,” and the decision to seek a replacement was made “in view of

the possible but *unascertainable* hazard to the environment in the long term.” Roach Decl., Ex. 57 [Nov. 9, 1971 Wiggins Teape Memorandum (MONSFOX00000606)].

90. Wiggins Teape was able to replace Aroclor 1242 for its products in the U.K. and Europe months before NCR was able to do so in the United States as a result of differences in the raw materials used in the CCP product overseas. Roach Decl., Ex. 58 [Gordon Taylor Dep. at 104:17-105:15]; Ex. 26 [H. Vodden Dep. at 88:22-89:18].

91. After Monsanto stopped selling PCBs, some U.S. companies found alternative sources through imports of PCBs from foreign manufacturers. Roach Decl., Ex. 3 [Aug. 6, 2009 Rebuttal Report of M. Williams at 45, n.130]; Ex. 59 [Feb. 25, 1976 Versar report, “PCBs in the U.S. – Industrial Use and Environmental Distribution” (GPFOX00023719)].

92. After performing testing at NCR and Wiggins Teape locations in the United Kingdom, Monsanto sent letters to U.S. customers stating that Aroclor 1242 had not been found in environmental samples and that environmental samples appeared to be limited to higher chlorinated Aroclors. Roach Decl., Ex. 60 [Jan. 13, 1970 Monsanto Memorandum (MONSFOX00056852)]; Ex. 17 [June 4, 2009 Report of M. Williams at 40, n.101].

93. Monsanto sent a letter to one of its PCB customers, FMC Corporation, in May 1970 after testing at the NCR/affiliate facilities in the United States, stating that Aroclor 1242 was not an environmental contaminant. Roach Decl., Ex. 61 [May 19, 1970 Monsanto Letter to FMC (NCR-FOX-0576152)].

94. There is no indication that Monsanto communicated to NCR any time before May 1971 that NCR’s use of Aroclor 1242 as a component in the emulsion it sold for the manufacture

of carbonless paper would cause Aroclor 1242 to accumulate in the environment or that such use, or the recycling of carbonless paper resulting from such use, could result in environmental harm. Roach Decl., Ex. 17 [June 4, 2009 Report of M. Williams at 40, n.101].

95. There is no indication that Monsanto communicated to NCR at any time before May 1971 that NCR's use of Aroclor 1242 caused Aroclor 1242 to accumulate in the environment or that NCR's use of Aroclor 1242 could result in environmental harm. Roach Decl., Ex. 17 [June 4, 2009 Report of M. Williams, at 40].

96. In a July 14, 1972 communication to FDA, Monsanto stated "that many PCBs are biodegradable, particularly the monochloro, dichloro and trichloro, with evidence that some of the tetrachloro and pentachloro also degrade." Roach Decl., Ex. 62 [July 14, 1972 Monsanto Letter (MONSFOX00095580)].

97. In July 1972, the American Paper Institute reported to the federal Department of Health, Education, and Welfare that, "Aroclor 1242 – the PCB found in recycled paper board – is the least chlorinated form of PCB found in the environment....[T]here is no evidence to indicate that Aroclor 1242 either persists or accumulates in the environment." Roach Decl., Ex. 63 [July 17, 1972 American Paper Institute Comments (NCR-FOX-0577479)].

98. On August 28<sup>th</sup> and 29<sup>th</sup>, 1975, the WDNR held hearings with respect to PCBs. Roach Decl., Ex. 64 [August 28/29, 1975 WDNR Hearing Transcript (NCR-FOX-0096936)].

99. Mr. Papageorge of Monsanto testified before the WDNR, that "if we could just turn the clock back and only use let's say 1221, a 1232 and even a 1242 and no others, we probably wouldn't be sitting in this room today. I just don't think a problem would have

developed.” Roach Decl., Ex. 64 [August 28/29, 1975 WDNR Hearing Transcript (NCR-FOX-0096936) at 26].

100. Plaintiffs’ expert Anderson has opined: “Even in 1972, after NCR had stopped the use of Aroclor 1242 in CCP, the manner by which PCBs reached the environment and the potential impacts of Aroclor 1242 on the environment were far from certain. The weight-of-evidence attesting to the adverse effects of Aroclor 1242 on the environment did not warrant action until after the decision to replace Aroclor 1242 had already been made and the substitution was completed.” Roach Decl., Ex. 22 [August 7, 2009 Report of E. Anderson at 1-2].

#### **VII. NCR AND MONSANTO DEVELOP AND IMPLEMENT MIPB AS A REPLACEMENT SOLVENT FOR AROCLOR 1242.**

101. NCR first considered a replacement for Aroclor 1242 in the mid-1960s for various business reasons, including a desire to replace the clay component on the coated front sheets for better performance, and a concern about relying on a single solvent and a single solvent supplier. Roach Decl., Ex. 65 [Dec. 15, 1965 NCR Progress Report (NCR-FOX-0445928)]; Ex. 66 [Jan. 1966 Progress Report (NCR-FOX-0318306)].

102. In March 1969, NCR and Monsanto discussed NCR’s ongoing efforts to find a substitute for Aroclor 1242. An internal Monsanto document reported, “NCR are always anxious to find replacements for Aroclor 1242 to get a lower cost, second source of supply, and lower odor.” Roach Decl., Ex. 67 [April 18, 1969 Monsanto Memorandum (MONSFOX00080385) at 2].

103. In December 1969, NCR and Monsanto met to discuss possible substitutes for Aroclor 1242, including monoisopropyl biphenyl (“MIPB”), the replacement candidate NCR

ultimately chose to replace Aroclor 1242 the next year. Roach Decl., Ex. 44 [Dec. 16, 1969 Monsanto/NCR Meeting Notes (GPFOX00030900)].

104. Monsanto did not inform NCR at the meetings in March 1969 or December 1969 that there was any immediate need to find a replacement solvent for Aroclor 1242. Roach Decl., Ex. 44 [Dec. 16, 1969 Monsanto/NCR Meeting Notes (GPFOX00030900)]; Ex. 67 [April 18, 1969 Monsanto Memorandum Describing March 1969 Meeting (MONSFOX00080385)].

105. Monsanto representatives similarly testified that they did not recall any timeline for the replacement of Aroclor being set in those meetings. Roach Decl., Ex. 68 [C. Paton Dep. at 141:14-142:6].

106. In addition to wanting to replace Aroclor 1242 for business reasons, NCR also became concerned about the continued availability of the product as well as negative publicity surrounding PCBs in general. Roach Decl., Ex. 51 [Sep. 30, 2009 R. Jezerc Declaration].

107. During these meetings in 1969, Monsanto and NCR discussed the publicity about potential risks associated with higher chlorinated PCBs. Roach Decl., Ex. 44 [Dec. 16, 1969 Monsanto/NCR Meeting Notes (GPFOX00030900)]; Ex. 67 [April 18, 1969 Monsanto Memorandum Describing March 1969 Meeting (MONSFOX00080385)].

108. Even with these assurances from Monsanto in late 1969 and early 1970, NCR continued with its effort to find a replacement for Aroclor 1242. Roach Decl., Ex. 69 [Mar. 6, 1970 Monsanto Memorandum (MONSFOX00099559) (noting that the “NCR people, both in the U.S. and U.K. have been looking for a substitute for Aroclor 1242 for several reasons. The PCB threat has accelerated this desire to convert.”)].

109. NCR investigated numerous potential replacements and potential suppliers other than Monsanto during its effort to find a substitute for Aroclor 1242. Roach Decl., Ex. 58 [Gordon Taylor Dep. at 103:9-104:11]; Ex. 17 [June 4, 2009 Report of M. Williams at 43].

110. MIPB was not in regular production when NCR began to consider it as a replacement for Aroclor 1242. Roach Decl., Ex. 68 [C. Paton Dep. at 140:19-142:6]; Ex. 26 [H. Vodden Dep. at 88:22-89:16]; Ex. 17 [June 4, 2009 Report of M. Williams at 46].

111. NCR was not able to obtain from Monsanto a sufficient amount of MIPB for testing until sometime in 1970. Roach Decl., Ex. 17 [June 4, 2009 Report of M. Williams at 46, n.124].

112. Monsanto performed toxicity and biodegradation testing on MIPB, while NCR tested safety and performance characteristics of CCP with MIPB. Roach Decl., Ex. 70 [Dec. 15, 1970 Monsanto Letter to NCR (NCR-FOX-0517914)]; Ex. 71 [May 20, 1970 NCR Special Products Division Brief (NCR-FOX-332210)].

113. NCR accelerated its effort to find a replacement for Aroclor 1242 between the first and second quarters of 1970. Roach Decl., Ex. 17 [June 4, 2009 Report of M. Williams at 45]; Ex. 72 [M. Williams' Interview Notes with G. Taylor (NCR-FOX-0592836)]; Ex. 73 [M. Williams' Interview Notes with J. Taylor (NCR-FOX-0592832)].

114. NCR and Monsanto met again in June 1970 to discuss the replacement project. Roach Decl., Ex. 74 [June 10, 1970 NCR Letter to Monsanto (MONSFOX00000151)].

115. At the June 1970 meeting, Monsanto informed NCR that it should move quickly to find a replacement for Aroclor 1242. Roach Decl., Ex. 17 [June 4, 2009 Report of M.

Williams at 45]; Ex. 72 [M. Williams' Interview Notes with G. Taylor (NCR-FOX-0592836)]; Ex. 73 [M. Williams' Interview Notes with J. Taylor (NCR-FOX-0592832)].

116. Former NCR employees who attended the June 1970 meeting did not recall that Monsanto discussed plans to imminently cease sales of Aroclor 1242 or that Aroclor 1242 was considered an environmental contaminant. Roach Decl., Ex. 17 [June 4, 2009 Report of M. Williams at 45]; Ex. 72 [M. Williams' Interview Notes with G. Taylor (NCR-FOX-0592836)].

117. In October 1970 NCR began to replace Aroclor 1242 with MIPB as Monsanto increased its production of MIPB and NCR finished product quality testing. Roach Decl., Ex. 75 [Oct. 27, 1970 NCR Special Products Group Quarterly Activity Report (NCR-FOX-0064071)]; Ex. 76 [June 24, 1970 ACPC Memorandum (NCR-FOX-0523963)].

118. Purchases of Aroclor 1242 were minimized once NCR began its accelerated effort to find a replacement. Roach Decl., Ex. 17 [June 4, 2009 Report of M. Williams at 47].

119. NCR completely ended the use of Aroclor 1242 in CCP by April 1971. Roach Decl., Ex. 56 [Dec. 7, 1972 Monsanto Letter (GPFOX00049252)].

120. After April 1971, neither NCR nor its licensees used Aroclor 1242 for CCP. Roach Decl., Ex. 56 [Dec. 7, 1972 Monsanto Letter (GPFOX00049252)]; Ex. 57 [Nov. 9, 1971 Wiggins Teape Memorandum (MONSFOX00000606)].

121. After the phase-out was completed, NCR returned its remaining Aroclor 1242 to Monsanto. Roach Decl., Ex. 77 [1971 Shipping Return Receipt (MONSFOX00000283)].



122. NCR took action to find a replacement for Aroclor 1242 before Monsanto stopped selling the material to a variety of customers. Roach Decl., Ex. 75 [Oct. 27, 1970 NCR Special Products Group Quarterly Activity Report (NCR-FOX-0064071)]; Ex. 54 [1/31/1972 Monsanto Letter to Pydraul customers (NCR-FOX-0576743)].

123. Plaintiffs' expert Williams, who began working at EPA at its inception in 1970, concluded, "NCR's actions in this timeframe, and particularly its decision to discontinue its use of Aroclor 1242 even though there was no definitive information suggesting that its continued use risked environmental harm, were reasonable and prudent given the preliminary and evolving information available as of 1971." Roach Decl., Ex. 17 [June 4, 2009 Report of M. Williams at 2, 13].

124. Plaintiffs' expert Anderson, who directed EPA's central risk assessment programs beginning in 1975, opined, "It is simply not credible to suggest that a company such as NCR had sufficient knowledge to be concerned about using a substance such as Aroclor 1242 especially in the absence of information about the toxicity of Aroclor 1242 at low environmental levels." Roach Decl., Ex. 22 [Aug. 7, 2009 Report of E. Anderson at 1].

#### **VIII. GOVERNMENT STATEMENTS, ACTIONS AND INQUIRIES REGARDING PCBS.**

125. In 1957, the U.S. Fish and Wildlife Service performed toxicity testing of some 4,000 chemicals – including four Aroclor compounds – to determine the effect on fish and larval lampreys, which testing found that PCBs were not acutely toxic to the tested species. Roach Decl., Ex. 78 [July 15, 1967 Monsanto Letter (GPFOX00045446)].

126. Government entities and Monsanto began expanded chronic toxicity testing on PCBs by 1970. Roach Decl., Ex. 79 [July 30, 1971 FDA Letter (NCR-FOX-0576455)].

127. Much of this testing was not completed until the early-to-mid-1970s. Roach Decl., Ex. 79 [July 30, 1971 FDA Letter (NCR-FOX-0576455)].

128. In the early 1970s, the United States Food and Drug Administration first began raising concerns about the PCB content of food packaging materials, and the potential for PCBs to migrate from these packaging materials into food products. Roach Decl., Ex. 80 [Foods Analyzed by FDA for PCB]; Ex. 81 [“The Status of PCBs” by L.L. Ramsey (NCR-FOX-0334410)].

129. Prior to 1972, government agencies distinguished between Aroclor 1242 and higher-chlorinated PCBs. Roach Decl., Ex. 82 [June 1971 Report “The Use and Disposal of Electrical Insulating Liquids” (MONSFOX00044051)]; Ex. 83 [1972 Interdepartmental Task Force Report (NCR-FOX-0563271), at, *inter alia*, 8, 63, 93-98].

130. In the early 1970s, scientists recognized that lower-chlorinated Aroclors were being released into the environment, but the evidence available at that time did not suggest the lower-chlorinated Aroclors were accumulating in the environment. Roach Decl., Ex. 17 [June 4, 2009 Report of M. Williams at 29-30].

131. PCBs were not regulated by the government until the 1970s. Roach Decl., Ex. 84 [Apr. 24, 1972 EPA Memorandum “Policy on PCBs” (GPFOX00033019)].

132. The United States formed an Interdepartmental Task Force in September 1971 in order to investigate available information on PCBs, evaluate what was known about the

chemicals, and identify what additional information was needed. Roach Decl., Ex. 83 [1972 Interdepartmental Task Force Report (NCR-FOX-0563271) at 1].

133. In April 1972, U.S. EPA developed a risk management strategy for all PCBs in water bodies, announcing, “It is the policy of the EPA that all discharges to the aquatic environment involving PCBs be restricted to the lowest possible level.” Roach Decl., Ex. 84 [Apr. 24, 1972 EPA Letter (GPFOX00033019)].

134. In April 1972, U.S. EPA set a desired limit in ambient waters for all types of Aroclors at .01 ppb, which was increased in stringency in later years as EPA gained additional information on the bioaccumulation of PCBs in aquatic environments. Roach Decl., Ex. 83 [1972 Interdepartmental Task Force Report (NCR-FOX-0563271)]; Ex. 84 [Apr. 24, 1972 EPA "Policy on PCBs"]; Ex. 17 [June 4, 2009 Report of M. Williams at 31].

135. In May 1972, the Interdepartmental Task Force analyzed information relating to the environmental impact of PCBs in Task Force Report. Roach Decl., Ex. 83 [1972 Interdepartmental Task Force Report (NCR-FOX-0563271)].

136. This 1972 Interdepartmental Task Force Report was well-publicized. Roach Decl., Ex. 17 [June 4, 2009 Report of M. Williams].

137. The Interdepartmental Task Force concluded that significant gaps remained but that: “The evidence available, however, indicates that PCBs must be viewed as potential problems. The difficulties of attaining a proper evaluation in any reasonable length of time suggest that the least costly course would be to take all measures possible to prevent their escape

into the environment.” Roach Decl., Ex. 83 [1972 Interdepartmental Task Force Report (NCR-FOX-0563271) at 168].

138. The Interdepartmental Task Force also concluded that “[t]here are currently no toxicological or ecological data available to indicate that the levels of PCBs currently known to be in the environment constitute a threat to human health.” Roach Decl., Ex. 83 [1972 Interdepartmental Task Force Report (NCR-FOX-0563271) at 3].

139. The Interdepartmental Task Force determined that all discharges of PCBs to the aquatic environment should be minimized. Roach Decl., Ex. 83 [1972 Interdepartmental Task Force Report (NCR-FOX-0563271) at 168].

140. The Interdepartmental Task Force specifically identified paper mills as facilities that had higher PCB levels in their effluent, and recommended that paper mills and other industrial plants take appropriate action to minimize all PCB discharges to water. Roach Decl., Ex. 83 [1972 Interdepartmental Task Force Report (NCR-FOX-0563271)].

141. The Interdepartmental Task Force stated the fact “that more scientific information about PCBs is needed is illustrated by the sparsity of knowledge about PCBs in the environment. Only general statements can be made about how PCBs reach the environment, how they reach target organisms, and how much is present.” Roach Decl., Ex. 83 [1972 Interdepartmental Task Force Report (NCR-FOX-0563271) at 14].

142. Bioaccumulation factors for Aroclor 1242 were not available in the May 1972 Interdepartmental Task Force report. Roach Decl., Ex. 83 [1972 Interdepartmental Task Force Report (NCR-FOX-0563271) at 1].

143. In 1973, EPA finalized its proposal to list all PCBs as toxic water pollutants, a precursor for regulating the discharge of all PCBs into water. Roach Decl., Ex. 85 [1973 EPA Water Quality Criteria (NCR-FOX-0578566)].

144. In 1973, the Food and Drug Administration published the initial human health advisory tolerance for PCBs in fish (5 mg/kg or 5 ppm). Roach Decl., Ex. 86 [A Chronology of Local Toxics Investigations, (NCR-FOX-0017997)].

145. Sampling data up until the 1975 timeframe continued to identify the presence of higher-chlorinated PCB Aroclors in most environmental samples. Roach Decl., Ex. 17 [June 4, 2009 Report of M. Williams at 35].

146. In the mid-1970s, government agencies and other researchers began to concentrate on the fact that all Aroclors are mixtures of different isomers and congeners. Roach Decl., Ex. 1 [July 17, 1975 WDNR Progress Report (NCR-FOX-0162508)].

147. In April 1976, WDNR noted that “Aroclor 1242 is not harmless by any means. Aroclor 1242 has many of the more highly chlorinated isomers present in Aroclors 1248 and 1254.” Roach Decl., Ex. 1 [July 17, 1975 WDNR Progress Report (NCR-FOX-0162508)].

148. In July 1976, EPA found that data indicated that Aroclors 1016 and 1242 were “widely present in fish in the United States. This in turn leads to substantial exposure of humans and other fish-eating animals.” Roach Decl., Ex. 87 [July 23, 1976 Federal Register Proposed Rule (GPFOX00009380)].

149. The only evidence in the record of NCR receiving governmental inquiries regarding CCP before 1972 is a 1957 inquiry from the New York State Department of Labor, to

which NCR fully responded by disclosing the presence of all constituents of CCP (including Aroclor 1242), and providing information on the toxicity tests that had been performed on Aroclor 1242. Roach Decl., Ex. 88 [Feb. 27, 1957 NCR Memorandum (APIFOX00023870)]; Ex. 89 [March 12, 1957 Letter from NCR to New York State Department of Labor (APIFOX00013515)].

150. There is no evidence that NCR ever failed to respond to any governmental inquiries regarding PCBs.

#### **IX. PUBLIC DISCLOSURES OF FACT OF PCBs IN CCP.**

151. NCR disclosed the fact that CCP contained PCBs in patents it filed in the 1950s. Roach Decl., Ex. 90 [U.S. Patent #2,712,507 (NCR-FOX-0322717)].

152. NCR disclosed the fact that CCP contained PCBs in 1970 to governmental entities. Roach Decl., Ex. 91 [Apr. 17, 1970 Meeting Minutes (MONSFOX00034522)].

153. An environmental journal article in 1970 disclosed the fact that PCBs were in CCP. Roach Decl., Ex. 33 [October 1970 Gustafson Article “PCBs – Prevalent and Persistent” (NCR-FOX-0576274)].

154. The fact that CCP contained PCBs was reported in a number of Wisconsin newspapers in 1971 and 1972. Roach Decl., Ex. 92 [1971-1972 Newspaper Articles (NCR-FOX-0620780)].

155. It was extremely common until the 1980s for trucking companies to use the same trucks to ship both hazardous and non-hazardous materials (including food products). Roach Decl., Ex. 3 [Aug. 6, 2009 Rebuttal Report of M. Williams at 48-50].

156. A review of 30 years of this practice by the EPA and DOT in 1987 revealed very few instances of joint-use contamination incidents. Roach Decl., Ex. 93 [April 1987 EPA Report to Congress “Study of Joint Use Vehicles for Transportation of Hazardous and Nonhazardous Materials” (NCR-FOX-0620421)].

**X. WIGGINS TEAPE TESTING REGARDING BROKE RECYCLING.**

157. John Gough, the former Wiggins Teape employee who was responsible for Wiggins Teape’s studies regarding the recycling of NCR broke, stated that his concern, and the reason for the broke recycling studies, was to determine how well the recycling process was able to remove dyes from the CCP recycled. Roach Decl., Ex. 94 [J. Gough Dep. at 25:20-26:12, 98:11-99:2; 115:17-116:2].

158. Mr. Gough stated that he was not concerned with the “fate” of Aroclors in the paper, but that a scientist at British American Tobacco Company (“BAT”) who was asked to test the removal of dyes suggested that it would be easier to study the removal of Aroclors as a “proxy” or “surrogate” for the dyes (as the dyes were too difficult to test directly). *Id.*

159. Mr. Gough stated that this testing was purely an “economic” issue, because Wiggins Teape was contemplating building its own recycling plant, and it wanted to make sure that the recycled products it made did not contain inks, and that it could deink the NCR broke without using so much bleach that the paper fiber was destroyed. Roach Decl., Ex. 94 [J. Gough Dep. at 97:19-98:10].

160. Mr. Gough did not share any of the results of this testing with anyone at NCR or ACPC until a conference in 1972, and he has no knowledge that anyone else ever shared such

information with anyone at NCR or Appleton Papers. *Id.* \_\_\_\_\_. Roach Decl., Ex. 94 [J. Gough Dep. at 29:17-31:4., 105:23-106:16].

161. Mr. Gough stated that the relationship between Wiggins Teape and NCR was “very carefully controlled” and that “Dr. Rance [of Wiggins Teape] was controlling the amount of information that got to NCR because he was concerned about -- you know, because it was a commercial relationship and licensing renewal, so he very mechanically managed what information went to them.” Roach Decl., Ex. 94 [J. Gough Dep. at 108:8-109:1].

162. Former NCR employees have similarly testified that the “technical exchange” of information between Wiggins Teape and NCR was not “open,” and was intended only to keep the quality of the product consistent. The information exchanged was of a technical nature, and Wiggins Teape and NCR were generally “secretive” about their respective research. Roach Decl., Ex. 95 [Aug. 28, 2009 G. Vichare Dep. at 63:11-64:4]; Ex. 24 [Sep. 18, 2009 G. Vichare Dep. at 101:4-16, 102:16-104:13]; Ex. 96 [H. Schwab Dep. at 35:20-36:11, 88:8-89:11].

163. As a result of the research conducted by Wiggins Teape, Wiggins Teape built its own broke recycling plant, hoping to achieve results similar to those achieved in the recycling experiments conducted by Wiggins Teape and BAT. Roach Decl., Ex. 94 [J. Gough Dep. at 66:1-10, 100:24-101:16].

164. The goal of WT’s recycling mill was to remove as much of the inks (and, coincidentally, PCBs) from the CCP, and ensure that those inks and Aroclors were discharged either to the river or to sludge and not to the recycled products. Roach Decl., Ex. 94 [J. Gough Dep. at 73:7-74:1, 97:19-99:3].



165. Mr. Gough stated that environmental issues were not a part of the work that he was doing. Roach Decl., Ex. 94 [J. Gough Dep. at 101:17-23].

166. Wiggins Teape continued to recycle broke through at least February 1970. Roach Decl., Ex. 97 [March 3, 1970 Monsanto Memo (PHGNCR-2005015), referencing a February 1970 visit to Wiggins Teape and describing Wiggins Teape's sale of broke to an outside broker at that time].

167. Mr. Gough is a paid consultant for at least one of the Defendants in this matter, and was paid for giving testimony in his fact deposition in this matter. Roach Decl., Ex. 94 [J. Gough Dep. at 78:8-80:13, 87:10-17].

#### **XI. CCP IN POST-CONSUMER GRADES OF RECOVERED FIBER.**

168. Broke generated from the manufacture of CCP was one type of Recovered Fiber that could be recycled by paper mills. Roach Decl., Ex. 98 [Suppl. Response of U.S. Paper to Information Request of U.S. Department of Interior (Exhibit 253 to R. Gerbers Dep.)].

169. CCP Broke generally consisted of any trim or cuttings from the finishing of CCP, as well as any off-specification paper that could not be sold as CCP. Roach Decl., Ex. 99 [D. Christensen Dep. at 21:12-22:9].

170. Because there was a market demand for it, CCP broke was considered a valuable product and a revenue generating part of Appleton Coated's business. Roach Decl., Ex. 99 [D. Christensen Dep. at 52:25 – 53:8]; Ex. 100 [P.H. Glatfelter Response to Third Section 104(e) Request of the U.S. Department of Interior (NCR-FOX-0236691) at 5 (discussing competition for CCP broke)]; Ex. 101 [F. Strelow Dep. at 114:17-22].

171. The ACPC facility never disposed of CCP broke, and had procedures in place to collect, sort, and bale CCP broke. Roach Decl., Ex. 99 [D. Christensen Dep. at 21:12-22:9]; Ex. 23 [F. Heinritz Dep. at 96:21-97:14]; Ex. 102 [July 21, 1966 ACPC Memorandum (NCR-FOX-0318041)].

172. The ACPC facility sold all of its CCP broke through recycled paper brokers, who then sold and delivered this CCP broke to various paper mills, including some of Defendants' facilities. Roach Decl., Ex. 99 [D. Christensen Dep. at 31:13-32:3]; Ex. 101 [F. Strelow Dep. at 40:23-41:23]; Ex. 103 [Aug. 7, 2009 Rebuttal Report of W. Moore at 2]; Ex. 23 [F. Heinritz Dep. at 20:15-20].

173. CCP broke would have contained Aroclor 1242 prior to April 1971. Roach Decl., Ex. 104 [July 10, 2009 Report of C. Klass at 11, 13-14].

174. Once the phase-out of Aroclor 1242 had been completed by April 1971, any newly generated CCP broke would not have contained any Aroclor 1242. Roach Decl., Ex. 104 [July 10, 2009 Report of C. Klass at 13].

175. CCP was also present in certain grades of post-consumer Recovered Fiber. Roach Decl., Ex. 104 [July 10, 2009 Report of C. Klass at 13-15]; Ex. 14 [June 5, 2009 Report of W. Moore at 9-10].

176. Multi-page forms made of CCP were filled out, separated, and distributed in the course of ordinary office and businesses practices, and were often stored in file cabinets and other storage locations. Roach Decl., Ex. 14 [June 5, 2009 Report of W. Moore at at 8-9].

177. Much of the multi-page forms made from CCP went through office paper recycling and file recycling/document destruction programs, and found their way into certain grades of post-consumer Recovered Fiber. Roach Decl., Ex. 14 [June 5, 2009 Report of W. Moore at 8-9].

178. Because old records that were put into storage often were not recycled for many years, certain grades of post-consumer Recovered Fiber contained pre-1971 CCP long after NCR discontinued the use of Aroclor 1242 in the manufacture of new CCP in April 1971. Roach Decl., Ex. 14 [June 5, 2009 Report of W. Moore at 9-11].

179. There were four grades of post-consumer Recovered Fiber that came primarily from office buildings and would have contained pre-1971 CCP even after 1971: Mixed Paper, Sorted White Ledger, Sorted Colored Ledger, and File Stock. Roach Decl., Ex. Ex. 14 [June 5, 2009 Report of W. Moore at 10].

180. Defendants' recycling mills recycled grades of recovered fiber most likely to contain PCBs. Roach Decl., Ex. 14 [June 5, 2009 Expert Report of W. Moore, at 6-7].

## **XII. ACTIONS AND STATEMENTS OF PAPER TRADE ORGANIZATIONS AND DEFENDANTS REGARDING PCBS.**

### **A. Paper Trade Organizations**

181. The Institute of Paper Chemistry stated in the 1970s that issues relating to PCBs in paper products and in paper mill effluents had been recognized by the paper industry since the late 1960s. Roach Decl., Ex. 105 [Institute of Paper Chemistry Report (NCR-FOX-0281317), at 1, stating: "The presence of PCBs in paper products and mill effluents has been recognized since the late 1960s."]; Ex. 106 [July 22, 1977 Institute of Paper Chemistry Report (NCR-FOX-

0073460), at 3, stating “Since the late 1960s PCBs have been known to be present in paper products and mill effluents.”].

182. As a result of concerns raised by the FDA in the early 1970s, the paperboard packaging industry began investigating potential sources of the PCBs being found in food packaging materials. Roach Decl., Ex. 107 [Sept. 15, 1971 BRDA Memo (MENFOX00001640)]; Ex. 108 [Sept. 28, 1971 BRDA News Release (MENFOX00001723)]; Ex. 109 [Oct. 1, 1971 American Paper Institute Memo (MENFOX00000149)].

183. By the end of 1971, the recycling of pre-1971 CCP was identified as the principal source of PCBs in food packaging materials. Roach Decl., Ex. 107 [Sept. 15, 1971 BRDA Memo (MENFOX00001640)]; Ex. 108 [Sept. 28, 1971 BRDA News Release (MENFOX00001723)]; Ex. 109 [Oct. 1, 1971 American Paper Institute Memo (MENFOX00000149)].

184. Beginning in January 1971, the American Paper Institute and other paper industry trade organizations issued a number of bulletins explaining that PCBs had been used in the manufacture of CCP, and that certain grades of recovered paper (such as mixed office waste and ledger grades) were likely sources of PCB-containing CCP. *See, e.g.*, Roach Decl., Ex. 110 [Jan. 12, 1971 American Paper Institute Letter (NCR-FOX-0334431)]; Ex. 107 [Sept. 15, 1971 BRDA Memo (MENFOX00001640)]; Ex. 108 [Sept. 28, 1971 BRDA News Release (MENFOX00001723)]; Ex. 109 [Oct. 1, 1971 American Paper Institute Memo (MENFOX00000149)].

185. Bulletins issued by the American Paper Institute and other paper industry trade organizations in the early 1970s advised recycling mills to “exercise extremely thorough

surveillance of incoming paper stock to ensure that PCB type carbonless carbon paper is not included in any bale of . . . mixed office grades that might be used” and to “avoid the use of mixed office waste that might contain NCR papers . . .” Roach Decl., Ex. 107 [Sept. 15, 1971 BRDA Memo (MENFOX000001640); Ex. 111 [Oct. 11, 1971 American Paper Institute Memo (MENFOX000000154)].

**B. Fort Howard Paper Company (Predecessor of the Georgia-Pacific Defendants)**

186. Donald Schneider was the in charge of the Technical Department of Fort Howard from 1969 through 1979. Roach Decl., Ex. 112 [D. Schneider Dep. at 17:8-25, 20:14-20].

187. The Technical Department at Fort Howard was responsible for pollution abatement activities, and Fort Howard’s Director of Pollution Abatement, David Pagel, reported to Mr. Schneider. Roach Decl., Ex. 112 [D. Schneider Dep. at 21:3-14].

188. Mr. Schneider stated that he learned that PCBs were contained in CCP at least by the time that Monsanto publicly announced that it was going to cease selling PCBs for use in CCP. Mr. Schneider stated that it was “well known” and “well publicized” in journals that related to the paper industry at the time that Monsanto made the decision to stop selling PCBs for use in CCP. Roach Decl., Ex. 112 [D. Schneider Dep. at 125:23-126:17, 127:11-21].

189. Former employees of Fort Howard, Bergstrom, Menasha, and U.S. Paper all testified to having read trade and industry publications during their employment with those companies. Roach Decl., Ex. 113 [P. Tallmadge Dep. at 16:17-23]; Ex. 114 [O. Ross Dep. at 16:2-6]; Ex. 115 [D. Pagel Dep. at 28:17-29:20]; Ex. 112 [D. Schneider Dep. at 31:6-15]; Ex. 116 [H. Sattler Dep. at 45:7-13]; Ex. 117 [T. Olson Dep. at 44:2-16].

190. Mr. Schneider also testified that he learned of a situation where shredded wheat was found to have been contaminated with PCBs as a result of a boxboard mill recycling CCP. Roach Decl., Ex. 112 [D. Schneider Dep. at 121:13-122:8, 122:10-16].

191. Mr. Schneider co-authored a report on PCBs in 1976 that placed the timing of these discoveries as sometime in the 1970-71 time frame, and Mr. Schneider stated that he believed that he learned about the connection between PCBs and CCP at that time. Roach Decl., Ex. 40 [1976 Fort Howard PCB Report (Ex. 114 to the Deposition of D. DeMeuse), at p. 2, stating that the “PCB situation, as it relates to the paper industry, came to light during 1970-71 when the U.S. Food & Drug Administration found PCBs in certain food products and traced this contamination to the recycled fiber used in the manufacture of the food packaging material]; Ex. 112 [D. Schneider Dep. at 145:7-146:9].

192. Fort Howard was therefore aware by June 1970 at the latest that CCP contained PCBs. Roach Decl., Ex. 40 [1976 Fort Howard PCB Report (Ex. 114 to the Deposition of D. DeMeuse), at 2]; Ex. 112 [D. Schneider Dep. at 125:23-126:17, 127:11-21, 145:7-146:9].

193. At the time he learned of the connection between PCBs and CCP, Mr. Schneider testified that he knew that Fort Howard was recycling CCP. Roach Decl., Ex. 112 [D. Schneider Dep. at 355:20-356:15].

194. Despite this knowledge, Mr. Schneider stated that, other than possibly some informal conversations regarding the shredded wheat incident, he did not discuss the PCB situation with anyone at Fort Howard. Roach Decl., Ex. 112 [D. Schneider Dep. at 123:12-124:15].

195. Mr. Pagel, Fort Howard's Director of Pollution Abatement, testified that Mr. Schneider never mentioned PCBs or their connection to CCP with him prior to 1974. Roach Decl., Ex. 115 [D. Pagel Dep. at 89:7-90:5].

196. Fort Howard did not do anything with respect to PCBs until 1974, when the WDNR tested Fort Howard's effluent and found PCBs. Roach Decl., Ex. 115 [D. Pagel Dep. at 90:6-91:6]; Ex. 112 [D. Schneider Dep. at 127:23-134:11].

197. The WDNR's testing during that time period determined that Fort Howard had the highest PCB discharges on the Fox River. Roach Decl., Ex. 118 [1976 WDNR PCB Report (GPFOX00000690) at 44, Table 5].

198. The WDNR estimated in 1976 that Fort Howard was releasing 3.8 pounds of PCBs per day to the Fox River, greater than three times the amount estimated as being discharged by Bergstrom (the second largest estimated discharger to the Fox River), and 17 times the amount the third largest discharger (Fond du Lac WWTP) was estimated to be releasing at that time]. Roach Decl., Ex. 118 [1976 WDNR PCB Report (GPFOX00000690) at 44, Table 5].

199. Two of Fort Howard's first steps in connection with the PCB situation were to develop the capability of testing for PCBs in-house, and then to initiate a program of testing its recycled fiber for PCBs. Roach Decl., Ex. 112 [D. Schneider Dep. at 128:10-134:11].

200. That testing was conducted on bales of recycled fiber that Fort Howard had in inventory and was waiting to recycle. Roach Decl., Ex. 119 [R. Lemerande Dep. at 65:2-66:17].

201. The testing revealed that Fort Howard still had many bales of pre-1971 paper in inventory, including entire bales of pre-1971 CCP, and bales dating back to 1967. Roach Decl., Ex. 120 [Analysis of Wastepaper Received by Fort Howard in 1975 and 1976, Exhibit B to “List of Exhibits” (Ex. 498 to the R. Geigel Dep.)]

202. These older bales, particularly the older bales of CCP, had very large PCB concentrations. Roach Decl., Ex. 120 [Analysis of Wastepaper Received by Fort Howard in 1975 and 1976, Exhibit B to “List of Exhibits” (Ex. 498 to the R. Geigel Dep.)].

203. Fort Howard’s 1975 testing of bales of recovered fiber revealed concentrations of pre-1971 bales of CCP, with PCB concentrations of 31,900,000 ppb (Sample 5A), 35,600,000 ppb (Sample 33), 10,800,000 ppb (Sample 25), 10,000,000 ppb (Sample 147), and 2,591,400 ppb (Sample 76). Roach Decl., Ex. 120 [Analysis of Wastepaper Received by Fort Howard in 1975 and 1976, Exhibit B to “List of Exhibits” (Ex. 498 to the R. Geigel Dep.)].

204. Fort Howard’s 1975 testing of bales of recovered fiber further revealed PCB concentrations of other grades of recovered fiber with PCB concentrations of 152,900 ppb (Sample 155 – Colored Ledger), 23,050 ppb (Sample 61 – Colored Ledger ), 6,100 ppb (Sample 30 – Newsprint), and 5,550 ppb (Sample 141 – Colored Ledger ).] Roach Decl., Ex. 120 [Analysis of Wastepaper Received by Fort Howard in 1975 and 1976, Exhibit B to “List of Exhibits” (Ex. 498 to the R. Geigel Dep.)].

205. After conducting this sampling, Fort Howard recycled all of the bales of recovered fiber from which the tested samples were taken; it did not take any of these bales out of inventory. Roach Decl., Ex. 121 [J. Powell Dep. at 138:7-22]; Ex. 119 [R. Lemerande Dep. at 76:8-77:2]; Ex. 122 [J. Herb Dep. at 31:5-16]; Ex. 123 [W. Martens Dep. at 118:15-24]; Ex. 124



[W. Charles Dep. at 142:3-9]; Ex. 40 [1976 Fort Howard Report on PCBs (Ex. 114 to D. DeMeuse Dep), at 12, stating “Fort Howard Paper Company feels that fluctuations in the in the PCB content of the effluent is directly attributable to the type of wastepaper processed. This is especially true for the October 22, 1975, sample and the December 19, 1975, sample as both of these samples were collected during periods in which large quantities of older wastepapers (pre-1974) were being processed in our system.”].

206. The March 5, 1976 “Report on Polychlorinated Biphenyls,” stated that, while a good deal of experimental work had been done by that point regarding PCBs, the results of those studies “have been reported for the most part as PCBs and not as a specific Aroclor.” Roach Decl., Ex. 40 [1976 Fort Howard Report on PCBs (Ex. 114 to D. DeMeuse Dep), at 14].

207. Fort Howard’s 1976 PCB Report further stated that it enclosed as a reference section many articles detailing PCBs in various wildlife forms, and that “in *all* cases...the PCB’s detected are not Aroclor 1242, but rather the higher chlorinated compounds.” Roach Decl., Ex. 40 [1976 Fort Howard PCB Report (Ex. 114 to D. DeMeuse Dep), at 15 (emphasis added)].

208. The report cites statements made by Mr. Kleinert of the WDNR during the public hearings on PCBs that, although the WDNR lumped all Aroclors together and dealt with them generically, the WDNR was able to identify which Aroclors were being found at the time, stating: “The principal Aroclor that we’re finding in fish is 1254. In lower Green Bay, the principal Aroclor we’re finding is 1248.” Roach Decl., Ex. 40 [1976 Fort Howard Report on PCBs (Ex. 114 to D. DeMeuse Dep), at 15].

209. The report also states that “[b]io-degradation represents a mechanism for removing PCBs from the environment,” and that “Aroclor 1242 is similar to [Aroclor] 1016,” a

compound that was found to biodegrade almost entirely. Roach Decl., Ex. 40 [1976 Fort Howard Report on PCBs (Ex. 114 to D. DeMeuse Dep), at 15-17].

210. The report also cites as support statements from William Papageorge during the August 1975 WDNR hearings on PCBs. Roach Decl., Ex. 40 [1976 Fort Howard Report on PCBs (Ex. 114 to D. DeMeuse Dep), at 17].

211. Fort Howard tested its recovered fiber on a yearly basis from 1975 until at least 1994. Roach Decl., Ex. 125 [R. Everson Dep. at 99:22-100:4]; Ex. 126 [Feb. 21, 1995 Fort Howard PCB Report to WDNR (Ex. 542-M to W. Charles Dep.), at Table 2 (p. 5), showing 17 years (1978-1994) of testing Fort Howard recovered fiber for PCBs].

212. Fort Howard never made a single change to the recovered fiber that it purchased as a result of this testing. Roach Decl., Ex. 121 [J. Powell Dep. at 46:5-47:19]; Ex. 124 [W. Charles Dep. at 91:14-25]; Ex. 112 [D. Schneider Dep. at 160:1-161:16, 259:12-19]; Ex. 115 [D. Pagel Dep. at 223:16-224:8]; Ex. 127 [D. DeMeuse Dep. at 66:10-13].

213. The results of this testing, and even the fact of the testing itself, was kept a secret from Fort Howard employees, purportedly on the advice of attorneys. Roach Decl., Ex. 128 [March 25, 1975 Letter from WARF Institute to R. Krueger, outside counsel to Fort Howard (Ex. 696-L to D. Schneider Dep.), attaching PCB analyses, stating “No one at Fort Howard has been contacted by us concerning these results.”]; Ex. 112 [D. Schneider Dep. at 193:9-195:20, 223:19-224:21, 364:1-23, explaining that Fort Howard’s attorneys sought to keep PCB testing information from being shared with anyone aside from Mr. Schneider, Mr. Everson, who actually performed the testing, and a Fort Howard attorney; and further stating that he was not

certain whether this information would have been shared with anyone outside of that circle at any point in the 1970s].

214. The employees responsible for purchasing Fort Howard's recovered fiber confirmed that they were never made aware of the results of Fort Howard's PCB testing, and some of those individuals did not even know that such testing had ever been conducted by Fort Howard. Roach Decl., Ex. 123 [W. Martens Dep. at 23:9-24:6, 94:19-95:14, 110:9-111:20]; Ex. 129 [R. Geigel Dep. at 13:12-14:23, 97:3-24]; Ex. 124 [W. Charles Dep. at 15:5-18, 131:15-23].

215. Fort Howard did not consult with the employees responsible for purchasing Fort Howard's recovered fiber to determine if it was feasible to avoid grades high in PCBs. Roach Decl., Ex. 124 [W. Charles Dep. at 135:15-23]; Ex. 123 [W. Martens Dep. at 136:2-9]; Ex. 129 [R. Geigel Dep. at 166:17-167:25].

216. This testing revealed grades of recovered fiber that routinely tested as having higher PCB concentrations. *See, e.g.*, Roach Decl., Ex. 126 [Feb. 21, 1995 Fort Howard PCB Report to WDNR (Ex. 542-M to W. Charles Dep.), at Table 2 (p. 5), showing that the Unprinted Poly, Office Fiber and Mixed Paper grades had an average PCB concentration over 17 years of testing (from 1978-1994) approximately 3½ times higher than the average of all other grades tested over that period<sup>1</sup>]; Ex. 130 [1985 Waste Paper PCB Analysis, Exhibit 696-S to the D. Schneider Dep.]; Ex. 131 [Aug. 12, 1986 Memo Attaching Waste Paper Analysis, Exhibit 696-T to the D. Schneider Dep.].

---

<sup>1</sup> The results for File Stock shown on this chart have been excluded from the average, due to the fact that these numbers were not accurately reported, as described *infra* at ¶ 217.

217. Fort Howard repeatedly informed the WDNR and other agencies that its testing revealed no connection between PCB concentration and grade of paper. *See, e.g.*, Roach Decl., Ex. 132 [Jan. 29, 1985 Letter from Fort Howard to Wisconsin Bureau of Wastewater Management (Ex. 143 to D. DeMeuse Dep., stating “there is no particular wastepaper grade that uniformly contributes more than others to the contamination of wastepaper with PCBs”]; Ex. 133 [Jan. 27, 1989 Letter from Fort Howard to WDNR (GPFOX00094652), stating “For example, the permit language requires a study of alternate wastepaper sources. Fort Howard has been testing the level of PCBs in wastepaper samples for ten (10) years. No significant correlation between the grade of wastepaper and PCB levels is indicated in this data.”]; Ex. 134 [Dec. 27, 1989 PCB Report from Fort Howard to WDNR (Ex. 115 to D. DeMeuse Dep.) at 3 “This data [regarding testing of recovered fiber grades at Table 3, which information omitted any reference to File Stock (see below), and itself showed certain grades that had notably higher PCB concentrations than other grades] leads to the conclusion that all wastepaper grades contain small and on average relatively uniform amounts of PCBs. Therefore, switching to alternate sources of supply cannot accomplish the required wastewater PCB reductions.”].

218. Starting in approximately 1972 or 1973, Fort Howard actually increased its purchasing of those grades of recycled fiber likely to contain higher PCB concentrations. Roach Decl., Ex. 135 [Fort Howard May 3, 1996 Responses to Rule 104(e) Requests from the Department of the Interior (NCR-FOX-0206804), stating “Starting in the 1970’s, changes in the availability of wastepaper required that Fort Howard use more mixed papers, and particularly more office papers of lower grades. This change increased the likelihood that Fort Howard would inadvertently receive wastepaper that included NCR grade from old office files and similar document archives throughout the United States.”]; Ex. 129 [R. Geigel Dep. at 165:2-

166:13, testifying that Fort Howard began buying lower grade office papers in response to increases in the price for recovered fiber beginning in approximately 1972 or 1973].

219. One of the least expensive grades of recovered fiber that contained one of the highest PCB concentrations was a grade called “File Stock.” Roach Decl., Ex. 14 [June 5, 2009 Report of W. Moore at 10-11]; Ex. 124 [W. Charles Dep. at 61:25-62:16].

220. File Stock was a grade of Recovered Fiber that was generated by businesses or government agencies when they wanted specifically to discard or destroy old business records and files that had been retained in file storage for many years. Roach Decl., Ex. 14 [June 5, 2009 Report of W. Moore at 10]; Ex. 124 [W. Charles Dep. at 56:22-58:5]; Ex. 123 [W. Martens Dep. at 57:11-59:9].

221. Continuing well into the 1980s, this grade was the most likely to contain pre-1971 CCP and have the highest PCB levels of any grade of Recovered Fiber, as, by definition, all of the paper contained in that grade was over a certain age. Roach Decl., Ex. 14 [June 5, 2009 Report of W. Moore at 11]. *Cf. id.* at Ex. 40 [1976 Fort Howard PCB Report (Ex. 114 to the Deposition of D. DeMeuse), concluding “We are cognizant, also, of the fact that there is a tremendous depository especially in business and government files, of paper containing a high concentration of PCBs.”].

222. Fort Howard was the first mill in the Fox River Valley to use File Stock beginning in the 1970s, and was the only mill to continue using sizeable amounts of File Stock into the mid-1980s. Roach Decl., Ex. 14 [June 5, 2009 Report of W. Moore at 11-12].

223. Fort Howard increased its use of File Stock from less than one ton per day in 1974 to more than 160 tons per day in 1989, with File Stock representing more than 14 percent of Fort Howard's total fiber usage by 1989. Roach Decl., Ex. 14 [June 5, 2009 Report of W. Moore at 13]; Ex. 136 [Fort Howard recovered paper receipts and consumption from August 1974 to August 1975 (GPFOX00138790 – GPFOX00138818)]; Ex.137 [Fort Howard 1989 Pulp Processing Report (GPFOX00139142)].

224. Testing in 1985 and 1986 revealed that the PCB concentrations of the File Stock samples tested in those years were the highest of any samples tested and approximately 153 times greater than the average of all other grades tested in 1985, and 31 times greater than the average of all other grades tested in 1986. Roach Decl., Ex. 130 [1985 Waste Paper PCB Analysis, Exhibit 696-S to the D. Schneider Dep.]; Ex. 131 [Aug. 12, 1986 Memo Attaching Waste Paper Analysis, Exhibit 696-T to the D. Schneider Dep.].

225. Two File Stock samples were tested in each of 1985 and 1986, and those samples that tested as having the highest PCB concentrations were omitted from the "average" PCB concentrations provided by Fort Howard to the WDNR. Roach Decl., Ex. 130 [1985 Waste Paper PCB Analysis, Exhibit 696-S to the D. Schneider Dep.]; Ex. 131 [Aug. 12, 1986 Memo Attaching Waste Paper Analysis, Exhibit 696-T to the D. Schneider Dep.]; Ex. 126 [Feb. 21, 1995 Fort Howard PCB Report to WDNR, Exhibit 542-M to the W. Charles Dep., at Tables 1 & 2 (pp. 4-5)]; Ex. 112 [D. Schneider Dep. at 249:22-253:14; 256:15-257:21; 257:25-259:6, discussing Exhibits 696-S and 696-T, as well as the fact that the high File Stock samples from each year were omitted from the numbers provided in Exhibit 542-M to the WDNR, referring to such samples (one of two tested in each year) as "outliers"]].

226. In 1984, Fort Howard tested its own finished products for PCBs and discovered that they had an average PCB concentration of 348 ppb; more than 12.5 times the average PCB concentration of the products from Fort Howard competitors that Fort Howard tested that same year. Roach Decl., Ex. 138 [1984 PCB Wastepaper Study, Ex. 748 to the Deposition of Richard Everson]; Ex. 125 [R. Everson Dep. at 152:18-155:19, discussing Exhibit 748].

227. Fort Howard never informed any customer of the presence of PCBs in its products and never included any warnings with its products regarding PCBs. Roach Decl., Ex. 112 [D. Schneider Dep. at 301:12-22]; Ex. 121 [J. Powell Dep. at 108:1-9]; Ex. 115 [D. Pagel Dep. at 184:14-17].

228. Fort Howard was a tissue manufacturer, producing all manner of tissue products. Roach Decl., Ex. 127 [D. DeMeuse Dep. at 19:2-12].

229. Until Fort Howard began dumping its sludge at a landfill that it operated, it dumped its sludge in at least two locations: the Ashwaubenon dump and an area known as Hocker's Brickyard. Roach Decl., Ex. 112 [D. Schneider Dep. at 101:12-102:11]; Ex. 121 [J. Powell Dep. at 20:19-21:12]; Ex. 115 [D. Pagel Dep. at 54:7-17].

230. The area that was formerly the Ashwaubenon dump is now part of the Ashwaubenon High School. Roach Decl., Ex. 112 [D. Schneider Dep. at 101:12-102:11]; Ex. 121 [J. Powell Dep. at 20:19-21:12]; Ex. 115 [D. Pagel Dep. at 54:7-17].

231. David Pagel, the person charged with overseeing Fort Howard's wastewater treatment system, testified that Fort Howard began experimenting with secondary treatment in

1957, and understood its capabilities several years in advance of actually implementing secondary treatment. Roach Decl., Ex. 115 [D. Pagel Dep. at 16:3-22, 17:21-19:10].

232. In the late-1960s, the Wisconsin government was advocating that paper mills study the possibility of engaging in joint treatment of their wastewaters with those of the Metropolitan Sewerage District. Roach Decl., Ex. 115 [D. Pagel Dep. at 34:14-37:23]; Ex. 139 [Jan. 9, 1967 Memorandum from D. Pagel (GPFOX00099277)].

233. Mr. Pagel wrote to the President of Fort Howard in January of 1967 regarding this proposal, referring to the “*questionable possibility of success of the project*,” but advocating Fort Howard’s involvement because of the “*very definite fact that we will buy two-and-a-half years of time during which both federal and state pressure should be off*.” Roach Decl., Ex. 139 [Jan. 9, 1967 Memorandum from D. Pagel (GPFOX00099277)].

234. Fort Howard delayed implementing secondary treatment until 1973. Roach Decl., Ex. 140 [Aug. 7, 2009 Report of J. Braithwaite at 10-11].

235. When Fort Howard ran a study of chemically assisted clarification in 1984 and 1985, the memo documenting the results reported that a “similar 12 day full scale experiment was conducted in Muscogee during 1979 during which significant reductions in TSS and PCB’s were noted.” Roach Decl., Ex. 141 [July 19, 1985 Fort Howard Memorandum (NCR-FOX-0110605)].

236. The memo reporting the results of the 1984 and 1985 experiments similarly noted reductions in PCB’s during the last month of the experiment of as much as 73% (with an average



reduction of 51%), and a reduction of TSS of as much as 87% (with an average reduction of 69%). Roach Decl., Ex. 141 [July 19, 1985 Fort Howard Memorandum (NCR-FOX-0110605)].

237. The President of Fort Howard, Mr. DeMeuse, responded to this memorandum by stating that he considered the results to be “very preliminary in nature,” and that Fort Howard needed to consider “the law of diminishing returns” in contemplating further reductions of TSS, BOD and PCB’s. Roach Decl., Ex. 142 [July 30, 1985 Memo from D. DeMeuse (NCR-FOX-0110604)].

238. In 1985, Fort Howard’s head of Research and Development, Donald Schneider, put together a memorandum comparing the concentration of PCB’s in Fort Howard’s discharges to the PCB concentrations in the discharges of other area mills in 1983 and 1984. Fort Howard had the highest PCB concentrations of any of the mills compared in both years, and those concentrations were at least three times greater than the other Fox River mills listed. Roach Decl., Ex. 143 [Jan. 21, 1985 Memo from D. Schneider (NCR-FOX-0096706)].

239. On numerous occasions, Fort Howard threatened that if it were made to comply with additional restrictions on its PCB discharges, the mill would be forced to close. *See, e.g.*, Roach Decl. Ex. 144 [1976 Fort Howard Statement Before Senate Committee on Natural Resources (GPFOX00009441), at 17-20 (stating that imposing the proposed PCB limitation of 20 ppb would likely force Fort Howard to close, resulting in negative economic and environmental effects for the State)]; Ex. 145 [Jan. 5, 1985 Newspaper Article (Ex. 140 to D. DeMeuse Dep.) (stating “Officials at the Fort Howard Paper Co. said...any state order requiring the company to [meet the proposed regulations] would force the plant to close”)].

240. Throughout the 1970s, Fort Howard continued to argue that implementing more advanced waste treatment systems was not required by the federal or state laws and regulations and such a system would have an undesirable economic impact. Roach Decl., Ex. 17 [June 4, 2009 Report of M. Williams at 92]; Ex. 146 [I. Charne opening statement and D. Pagel testimony at 1975 Adjudicatory Hearing (GPFOX00016521), at 3-5, 43-44]; Ex. 147 [D. Pagel Jan. 4, 1977 testimony (NCR-FOX-0163547) (arguing that Fort Howard should not have to improve its treatment performance until EPA finalizes its definitions of best practicable treatment and best available treatment)]; Ex. 148 [April 2, 1979 Letter from WDNR to L. Hermes (NCR-FOX-0000742) explaining the reasons that WDNR was unable to require further PCB reductions at Fort Howard].

241. In the 1970s, WDNR described Fort Howard as a “major polluter of the Fox River” that “has taken DNR to court in an attempt to get pollution standards weakened.” Roach Decl., Ex. 149 [May 17, 1976 WDNR Letter (NCR-FOX-0570414)]; Ex. 150 [Sept. 16, 1970 WDNR Report (NCR-FOX-0057465)].

242. In 1979, WDNR detailed steps Fort Howard took to interfere with progress in regulating levels of PCBs in wastewater discharges. Roach Decl., Ex. 151 [Apr. 2, 1979 WDNR Letter (Ex. 128 to D. DeMeuse Dep.)].

243. Fort Howard failed to implement chemically assisted clarification treatment until at least 1990. *See, e.g.*, Roach Decl., Ex. 152 [Feb. 21, 1995 Wastewater Effluent PCB Reduction Program Final Report (GPFOX00019067) at 7].

244. In 1989 the EPA mandated that Fort Howard further reduce the PCB concentration of its discharge. Roach Decl., Ex. 153 [June 30, 1989 Newspaper Article (Ex. 150 to D. DeMeuse Dep.)].

245. In 1993, the USEPA reported that Fort Howard was the only paper company in Wisconsin, and one of only eight dischargers in all of Region V continuing to report discharges of PCBs to Great Lakes receiving waters. Roach Decl., Ex. 154 [1994, USEPA Report on PCBs (GPFOX00013616) at 10].

246. Throughout the mid-1970s, the document record indicates that Fort Howard was focused on reducing BOD, TSS, and phosphorous levels and was not specifically focused on reduction of PCB discharge levels. Roach Decl., Ex. 17 [June 4, 2009 Report of M. Williams at 91].

247. Throughout the 1970s, Fort Howard discharged levels of PCBs higher than most of the industry and, at various times, discharged levels of BOD and TSS above its permit limits, yet Fort Howard continued to expand its production even though it had not achieved an adequate level of pollutant control. Roach Decl., Ex. 17 [June 4, 2009 Report of M. Williams at 92].

248. In a February 6, 1981 letter, the EPA notified Fort Howard that its discharge continued to show the presence of PCBs and recent bioassays found that the Fort Howard discharge was toxic to aquatic organisms. Roach Decl., Ex. 155 [Feb. 6, 1981 Letter from EPA to Fort Howard (NCR-FOX-0000995)].

249. In the February 6, 1981 letter, the EPA also requested that Fort Howard take immediate actions to address these issues, using Clean Water Act authorities to require Fort

Howard to provide extensive information and to submit plans for pilot studies of treatment methods for removing PCB for the mill's effluent. Roach Decl., Ex. 155 [Feb. 6, 1981 Letter from EPA to Fort Howard (NCR-FOX-0000995) (stating "The studies shall be of sufficient scale that the results can be readily applied to treatment of the total effluent from the facility. The goal of the pilot studies shall be to reduce the PCB in the effluent to the lowest level that can be achieved on a consistent basis." )].

250. The EPA also required Fort Howard, in its February 6, 1981 letter, to evaluate chemical addition and clarification and multimedia filtration at a minimum. Roach Decl., Ex. 155 [Feb. 6, 1981 Letter from EPA to Fort Howard (NCR-FOX-0000995)].

251. Fort Howard's actions during the 1970s and into the 1980s increased the risk of additional PCB contamination to the Lower Fox River. Roach Decl., Ex. 17 [June 4, 2009 Expert Report of M. Williams at 84-95].

252. Indeed, it was not until at least 1989, when the WDNR and EPA mandated that Fort Howard reduce the PCB concentration of its discharge, that Fort Howard finally implemented chemically assisted clarification, even though it had achieved success with it in experiments conducted at another of its facilities in 1979, and in additional experiments at the Green Bay mill from 1984 through 1989. Roach Decl., Ex. 141 [July 19, 1985 Fort Howard Memorandum (NCR-FOX-0110605)].

**C. Bergstrom Paper Company (Predecessor of P.H. Glatfelter Company)**

253. In August 1975, Richard Wand, a Vice President of the Bergstrom Paper Company ("Bergstrom"), testified at the WDNR hearings on PCBs:

[T]here is no evidence known by us which would suggest that Aroclor 1242 found in our effluent is the same Aroclor found to accumulate in the fatty tissue tissues of fish, fowl, or other wildlife. Indeed, though it has been documented that Aroclor 1242 was the most plentiful Aroclor produced by Monsanto, few traces of this variety are being found in the environment.

It is apparent from the testimony gathered at these hearings that legitimate questions of concern have been raised about PCB's. It is also apparent, I think, that we have great gaps in our knowledge about the effect, the degradability, and the economics of eliminating PCB's. We believe that it would be unconscionable for the Department to promulgate these proposed rules without better documentation, to show that the proposed discharge limitations are necessary; that they are attainable and that they are of sufficient benefit to merit halting recycling in the State of Wisconsin.

Roach Decl., Ex. 64 [August 28-29, 1975 WDNR Hearing Transcript (NCR-FOX-0096936) at 43-46]; Ex. 156 [R. Wand Resumé (Ex. 756 to R. Wand Dep.)].

254. Personnel at Bergstrom learned about PCBs in CCP at least by August 1971.

Roach Decl., Ex. 157 [PHG Responses to NCR Interrogatories (Exhibit 367 to E. Gallaher Dep.) at 7].

255. Bergstrom sampled finished paper for the presence of PCBs in 1971 and 1972.

Roach Decl., Ex. 158 [November 18, 1971 Institute of Paper Chemistry Letter and Attachment, Exhibit 329 to K. Maves Dep.]; Roach Decl., Ex. 159 [December 3, 1971 Bergstrom Memo (Exhibit 330 to K. Maves Dep.)]; Roach Decl., Ex. 160 [May 17, 1972 Bergstrom Memo (Exhibit 335 to K. Maves Dep.)].

256. In 1972, PCBs were detected in Bergstrom finished paper produced more than a year after April 1971. Roach Decl., Ex. 160 [May 17, 1972 Bergstrom Memo (Exhibit 335 to K. Maves Dep.)].

257. PCBs were detected in all of the finished paper sampled by Bergstrom in 1971 and 1972. Roach Decl., Ex. 158 [November 18, 1971 Institute of Paper Chemistry Letter and Attachment (Exhibit 329 to K. Maves Dep.)]; Roach Decl., Ex. 159 [December 3, 1971 Bergstrom Memo (Exhibit 330 to K. Maves Dep.)]; Roach Decl., Ex. 160 [May 17, 1972 Bergstrom Memo (Exhibit 335 to K. Maves Dep.)].

258. Bergstrom sampled wastewater effluent for the presence of PCBs beginning in 1973. Roach Decl., Ex. 161 [October 17, 1973 Institute of Paper Chemistry Letter and Attachment (Exhibit 336 to K. Maves Dep.)].

259. PCBs were detected in wastewater effluent sampled at the Bergstrom mill in 1973. Roach Decl., Ex. 161 [October 17, 1973 Institute of Paper Chemistry Letter and Attachment (Exhibit 336 to K. Maves Dep.)].

260. Bergstrom sampled recovered fiber for the presence of PCBs in 1975. Roach Decl., Ex. 162 [May 12, 1975 Institute of Paper Chemistry Letter and Attachment (Part of Exhibit 586 to L. Wilhelm Dep.)].

261. PCBs were detected in recovered fiber sampled at the Bergstrom mill in 1975. Roach Decl., Ex. 162 [May 12, 1975 Institute of Paper Chemistry Letter and Attachment (Part of Exhibit 586 to L. Wilhelm Dep.)].

262. Bergstrom made no changes in its papermaking operations in response to learning that PCBs were detected in samples of finished paper, wastewater effluent and recovered fiber. Roach Decl., Ex. 163 [C. Hess Dep. at 183:24-184:4]; Ex. 114 [O. Ross Dep. at 135:2-5]; Ex. 164 [D. Bergstrom Dep. at 183:21-184:14].

263. Cecil Hess, administrative vice president at Bergstrom in the 1970s, testified, “[A]s far as I was concerned, [PCB] was in the waste stream, and the purchasing department was sending it to me, so I deinked it and made paper out of what I got.” Roach Decl., Ex. 163 [C. Hess Dep. at 15:9-19, 106:6-106:9].

264. In the 1970s, Bergstrom purchased and recycled a grade of wastepaper called Sorted Colored Ledger. Roach Decl., Ex. 14 [June 5, 2009 Report of W. Moore at 14].

265. Sorted Colored Ledger was a grade of recovered fiber that was collected primarily from offices. Roach Decl., Ex. 14 [June 5, 2009 Report of W. Moore at 10].

266. In approximately 1973, Bergstrom began to recycle recovered fiber from a program that obtained wastepaper from offices. Roach Decl., Ex. 165 [July 10, 2000 Affidavit of Richard Wand (Exhibit 757 to R. Wand Dep.)].

267. The Shade office recycling program had 450 customer organizations participating in the desk-top office paper collection program and collected 10,000 tons of office paper in 1976. Roach Decl., Ex. 166 [Fourth Report to Congress: Resource Recovery and Waste Reduction at (NCR-FOX-368195) at 38].

268. Bergstrom’s mill in Neenah was the only mill to recycle recovered fiber collected from the Shade office recycling program. Roach Decl., Ex. 167 [Defendant P.H. Glatfelter Company’s Responses and Objections to Defendant United States of America’s First Set of Interrogatories and Requests for the Production of Documents to Defendant P.H. Glatfelter Company (Exhibit 1018 to C. Missimer Dep.) at 10].

269. Bergstrom recycled CCP broke at least throughout the 1960s and 1970s. Roach Decl., Ex. 168 [June 3, 1955 Debit Memo (NCR-FOX-0276909)]; Ex. 100 [P.H. Glatfelter Response to Third Section 104(e) Request of the U.S. Department of Interior (NCR-FOX-0236691) at 5]; Ex. 169 [R. Wand Dep. at 78:1-24].

270. Bergstrom's fiber procurement manager, Dedric Bergstrom, was not aware of testing of wastepaper for the presence of PCBs during the 1970s. Roach Decl., Ex. 164 [D. Bergstrom Dep. at 19:14-15, 139:18-139:23].

271. In July 1974, WDNR transmitted to Bergstrom results of PCB testing of wastewater effluent at the Bergstrom mill. Roach Decl., Ex. 170 [July 5, 1974 WDNR Letter and Attachment (Exhibit 519 to O. Ross Dep.)].

272. In 1974, WDNR effluent sampling at the Bergstrom mill detected a PCB concentration of 18.5 ppb. Roach Decl., Ex. 170 [July 5, 1974 WDNR Letter and Attachment (Exhibit 519 to O. Ross Dep.)].

273. In 1974, WDNR expressed the following conclusion and recommendation regarding the Bergstrom mill: "The Department feels PCBs at any level in an effluent should [be] eliminated. It appears in this case that the NCR waste paper should be eliminated from the recycle fiber system." Roach Decl., Ex. 170 [July 5, 1974 WDNR Letter and Attachment (Exhibit 519 to O. Ross Dep.)].

274. Bergstrom sent a letter to WDNR in 1975 that transmitted PCB analyses of fourteen samples of recovered fiber. Roach Decl., Ex. 162 [May 23, 1975 Bergstrom Letter (Part of Exhibit 586 to L. Wilhelm Dep.)].



275. In May 1975, seven of fourteen samples of recovered fiber at the Bergstrom mill showed detectable amounts of PCB present. Roach Decl., Ex. 162 [May 23, 1975 Bergstrom Letter (Part of Exhibit 586 to L. Wilhelm Dep.)].

276. In May 1975, Bergstrom informed WDNR that “[t]he seven wastepaper grades which show a detectable amount of PCB present represent approximately 50 percent of the waste which we recycle. These grades represent mostly office waste, forms, NCR, and ledger which we feel could come from old files which would date back to when PCBs were being used in the manufacture of carbonless papers.” Roach Decl., Ex. 162 [May 23, 1975 Bergstrom Letter (Part of Exhibit 586 to L. Wilhelm Dep.)].

277. Bergstrom sent a letter to WDNR stating: “If it were necessary for us to eliminate these grades from our recycling process it would impose a serious financial burden on us and would throw this large volume of waste back for other means of disposal such as landfill or incineration.” Roach Decl., Ex. 162 [May 23, 1975 Bergstrom Letter (Part of Exhibit 586 to L. Wilhelm Dep.)].

278. PCB discharges in effluent could have been reduced if Bergstrom improved its wastewater treatment system. Roach Decl., Ex. 17 [June 4, 2009 Report of M. Williams at 79-80]; Roach Decl., Ex. 140 [Aug. 7, 2009 Report of J. Braithwaite at 15-16].

279. In 1969, the State of Wisconsin issued a Pollution Abatement Order to Bergstrom which required that the company cooperate in the provision of joint municipal-industrial collection and treatment facilities by December 31, 1972 or construct its own treatment facilities meeting effluent standards and limitations by same date. Roach Decl., Ex. 171 [November 13, 1974 Findings of Fact, Conclusions of Law and Order (Exhibit 227 to J. Haney Dep.)].

280. Construction on the secondary treatment plant at the Bergstrom mill was completed in December 1976. Roach Decl., Ex. 172 [June 1, 1996 Response of the P.H. Glatfelter Company to the Request for Cooperation in Providing Information of the United States Department of the Interior Concerning the Fox River/Green Bay Site, dated February 22, 1996 (Exhibit 156 to K. Maves Dep.) at 17].

281. The secondary treatment system at the Bergstrom mill experienced numerous start-up problems and equipment deficiencies in the mid-to-late-1970s. Roach Decl., Ex. 172 [June 1, 1996 Response of the P.H. Glatfelter Company to the Request for Cooperation in Providing Information of the United States Department of the Interior Concerning the Fox River/Green Bay Site (Exhibit 156 to K. Maves Dep.) at 17]; Ex. 173 [C. Missimer Dep. at 137:1-4].

282. In 1977 and 1983 the State of Wisconsin sued Bergstrom for alleged violations of its wastewater discharge permit. Roach Decl., Ex. 174 [July 7, 1977 State of Wisconsin Complaint (Exhibit 236 to J. Haney Dep.)]; Ex. 175 [1983 Complaint against Bergstrom (NCR-FOX-0146651)].

283. Wisconsin's Assistant Attorney General described Bergstrom as having a "lackadaisical attitude toward environmental protection." Roach Decl., Ex. 176 [Feb. 4, 1981 Wisconsin Department of Justice Letter (NCR-FOX-0123738)].

284. Bergstrom began to deposit sludge into Arrowhead Park Landfill in 1952. Roach Decl., Ex. 177 [April 1999 Arrowhead Park Landfill Evaluation (Exhibit 871 to S. Shimek Dep.) at p. v].

285. Arrowhead Park Landfill was built in a portion of Lower Fox River. Roach Decl., Ex. 178 [February 3, 1970 Department of the Army Public Notice (NCR-FOX-0621363)]; Roach Decl., Ex. 177 [April 1999 Arrowhead Park Landfill Evaluation (Exhibit 871 to S. Shimek Dep.) at p. v].

286. Arrowhead Park Landfill was used for sludge disposal until 1976. Roach Decl., Ex. 177 [April 1999 Arrowhead Park Landfill Evaluation (Exhibit 871 to S. Shimek Dep.) at p. v].

287. In 1973, WDNR ordered Bergstrom to close Arrowhead Park Landfill because it was located within 1,000 feet of a lake. Roach Decl., Ex. 179 [June 11, 1973 WDNR Letter (Exhibit 515 to O. Ross Dep.)].

288. A Glatfelter consultant estimated that 262,802 dry tons of sludge were placed in Arrowhead Park Landfill from 1952 to 1976. Roach Decl., Ex. 180 [June 5, 2009 Expert Report of W. Shields at 5-1].

289. Arrowhead Park Landfill occupied approximately 33 acres. Roach Decl., Ex. 177 [April 1999 Arrowhead Park Landfill Evaluation (Exhibit 871 to S. Shimek Dep. at p. v)].

290. Bergstrom officials knew as early as the 1960s that solids from the Arrowhead Park Landfill were released to the Lower Fox River. Roach Decl., Ex. 181 [Aug. 26, 1960 Bergstrom Memo (Ross Exhibit 512)].

291. Bergstrom did not notify WDNR about discharges from Arrowhead Park Landfill. Roach Decl., Ex. 3 [Aug. 6, 2009 Rebuttal Report of M. Williams at 81].

292. Bergstrom was aware that recycling pre-1971 (PCB-containing) CCP could result in contamination of sludge with PCBs in 1971. Roach Decl., Ex. 173 [C. Missimer Dep. at 66:7-67:1].

293. Bergstrom did not make any changes in landfill operations between 1971 and 1976. Roach Decl., Ex. 114 [O. Ross Dep. at 70:3-70:11]; Roach Decl., Ex. 182 [R. Swoboda Dep. at 116:6-10].

294. A Glatfelter consultant estimated that 2,613 dry tons of PCB-containing sludge were released from Arrowhead Park Landfill to the Lower Fox River between 1971 and 1976. Roach Decl., Ex. 183 [August 7, 2009 Rebuttal Report of W. Shields at 2-5].

295. Bergstrom “did not take actions that could have reduced the risk of further PCB contamination to the River from the Landfill.” Roach Decl., Ex. 180 [June 5, 2009 Report of W. Shields at p. 1-3].

296. Before the late 1970s, Bergstrom did not take reasonable, prudent and available actions to prevent the risk of further PCB contamination to the Lower Fox River. Roach Decl., Ex. 17 [June 4, 2009 Report of M. Williams at 74-84].

**D. Menasha Corporation**

297. Menasha knew that CCP contained PCBs by January 1971. Roach Decl., Ex. 184 [D. Austin Dep. at 103:1-25]; Ex. 110 [Jan. 12, 1971 American Paper Institute Letter (NCR-FOX-0334431)].

298. Menasha was a member of the American Paper Institute and the Boxboard Research and Development Association (“BRDA”). Roach Decl., Ex. 116 [H. Sattler Dep. at 28:9-16]; Ex. 184 [D. Austin Dep. at 107:2-5].

299. Menasha typically received the bulletins sent out by the American Paper Institute and BRDA to member companies. Roach Decl., Ex. 184 [D. Austin Dep. at 88:2-21]; Ex. 116 [H. Sattler Dep. at 45:7-13].

300. Menasha received a bulletin from the American Paper Institute dated January 12, 1971 that explained that PCBs had previously been used in the manufacture of CCP, and that recycling mills should “be careful that paper stock to be used in making combination paperboard for food packaging does not include [CCP].” Roach Decl., Ex. 184 [D. Austin Dep. at 103:1-25]; Ex. 110 [Jan. 12, 1971 American Paper Institute Letter (NCR-FOX-0334431)].

301. Menasha received a bulletin from the BRDA in September 1971 that advised it to “avoid the use of mixed office waste that might contain NCR papers, or any other material so contaminated, such as ledger grades from multiple forms factories.” Roach Decl., Ex. 184 [D. Austin Dep. at 104:1-105:7]; Ex. 107 [Sep. 1971 BRDA Bulletin (MENFOX00001640)].

302. David Austin was the purchasing agent for Menasha at the John Strange Mill from the late 1950s to approximately 1974. Roach Decl., Ex. 184 [D. Austin Dep. at 78:10-17]; Ex. 185 [D. Austin Affidavit (Exhibit 554C to D. Austin Dep.)].

303. Mr. Austin was responsible for all wastepaper purchasing for the John Strange Mill from the late 1950s to approximately 1974. Roach Decl., Ex. 184 [D. Austin Dep. at 59:25-60:4; Ex. 185 [D. Austin Affidavit (Exhibit 554C to D. Austin Dep.)].

304. Mr. Austin testified in a prior deposition and affidavit that Menasha knew about PCBs in CCP as early as the 1950s or 1960s, and that he was instructed not to purchase any grades of recovered fiber containing CCP because it might contain PCBs. Roach Decl., Ex. 185 [D. Austin Affidavit (Exhibit 554C to D. Austin Dep.)]; Ex. 186 [Dec. 23, 1992 D. Austin Dep. (MENFOX00004384) at p. 14].

305. Menasha knew that the recycling of CCP would result in the discharge of PCBs to a waterbody no later than October 1971. Roach Decl., Ex. 184 [D. Austin Dep. at 100:11 – 101:1].

306. By the late 1960s or early 1970s, Menasha was aware that there was PCB contamination of the Fox River. Roach Decl., Ex. 184 [D. Austin Dep. at 100:11 – 101:1].

307. Based on bulletins Menasha received from the API and BRDA between January and October 1971, Menasha became aware that the PCBs in the Fox River were coming from the recycling of CCP. Roach Decl., Ex. 184 [D. Austin Dep. at 100:11 – 101:1].

308. Menasha knew no later than September 1971 that certain grades of Recovered Fiber were most likely to contain CCP manufactured using PCBs. Roach Decl., Ex. 184 [D. Austin Dep. at 104:1-105:7]; Ex. 107 [Sep. 1971 BRDA Bulletin (MENFOX00001640)].

309. Menasha received a “Technical Summary” from the BRDA in September 1971 that explained that a direct source of PCBs in recycled paperboard was the use of office waste containing CCP. Roach Decl., Ex. 184 [D. Austin Dep. at 104:1-105:7]; Ex. 107 [Sep. 1971 BRDA Technical Summary (MENFOX00001640)].

310. In July 1972, W. Allen Schenck spoke to “[a]n official of Appleton Coated” who stated “‘off the record’ that old PCB containing NCR paper could turn up in office waste for 3-5 years.” Roach Decl., Ex. 187 [June 6, 1972 Menasha Memorandum (MENFOX00003590)].

311. Menasha continued purchasing and recycling Mixed Paper, which it knew came from offices and was likely to contain pre-1971 CCP, throughout the 1970s. Roach Decl., Ex. 184 [D. Austin Dep. at 66:1-68:18, 113:3-15]; Ex. 188 [Aug. 28/29, 1975 WDNR Hearing Transcript (NCR-FOX-0281394)]; Ex. 189 [June 25, 1976 Versar Letter (MENFOX00001940)].

312. Mr. Austin testified that the mixed paper recycled at the John Strange Mill was collected from offices and businesses. Roach Decl., Ex. 184 [D. Austin Dep. at 66:1-68:18].

313. Mr. Austin testified that, even after learning about PCBs in CCP, there “wasn’t a major shift in the purchasing of Recovered Fiber at the [John Strange] mill,” and that “the mill continued purchasing the four major grades [of Recovered Fiber],” including mixed paper, from the same brokers. Roach Decl., Ex. 184 [D. Austin Dep. at 113:3-15].

314. Allen Schenck was the vice president of technical and environmental for Menasha in August 1975. Roach Decl., Ex. 188 [Aug. 28/29, 1975 WDNR Hearing Transcript (NCR-FOX-0281394)].

315. Mr. Schenck made a statement to the WDNR in August 1975 regarding PCB related issues at the John Strange Mill. He stated that the mill used approximately 25,000 tons of mixed paper a year (or about 30 percent of its furnish). Roach Decl., Ex. 188 [Aug. 28/29, 1975 WDNR Hearing Transcript (NCR-FOX-0281394)].

316. In June 1976, Versar Inc. was generating a model on “polychlorinated biphenyls in the pulp and paper industry.” In a questionnaire sent to the John Strange Mill for this model, Menasha responded that 30 percent of its input raw materials were mixed papers. Roach Decl., Ex. 189 [June 25, 1976 Versar Letter (MENFOX00001940)].

317. Menasha also responded to the Versar questionnaire in June 1976 that the input raw materials used at the John Strange Mill had not been subject to change in composition in the past, and that the input streams were not monitored for PCB content. Roach Decl., Ex. 189 [June 25, 1976 Versar Letter (MENFOX00001940)].

318. Menasha did not meaningfully inspect or screen incoming Recovered Fiber for CCP. Roach Decl., Ex. 104 [July 10, 2009 Report of C. Klass at 17-20 (“[n]o feasible mechanism . . . in the 1970s or 1980s to remove PCB-containing NCR-brand carbonless copy paper from post-consumer wastepaper grades.”)].

319. Roger Ackerman was the purchasing manager for the John Strange Mill from 1976 to 1983. Roach Decl., Ex. 190 [R. Ackerman Dep. at 12:4-14:10, 27:2-10].

320. Mr. Ackerman was not instructed about PCBs, PCBs in CCP, or screening incoming Recovered Fiber for CCP. Roach Decl., Ex. 190 [R. Ackerman Dep. at 83:14 – 85:12].

321. Mr. Austin testified that CCP was visually indistinct, and that it was impossible to tell whether a given sheet of paper was CCP just by looking at it. Roach Decl., Ex. 184 [D. Austin Dep. at 79:24-80:10].



322. In his statement to the WDNR in August 1975, Allen Schenck said that there was “no practical method to select PCB free paper in bale form.” Roach Decl., Ex. 188 [Aug. 28/29, 1975 WDNR Hearing Transcript (NCR-FOX-0281394)].

323. Menasha did not make any efforts to eliminate PCBs from its finished product or from the Recovered Fiber it recycled. Roach Decl., Ex. 191 [Sep. 11, 1973 Menasha Memorandum (MENFOX00000347)]; Ex. 192 [Nov. 22, 1977 Menasha PCB Test Program Document (MENFOX00001903)]; Ex. 193 [Dec. 20, 1977 Menasha Letter (MENFOX00001904)].

324. Throughout the 1970s, Menasha was concerned primarily with ensuring that paperboard used for food packaging purposes had PCB levels below 10 ppm, not with eliminating PCBs from the product altogether. Roach Decl., Ex. 191 [Sep. 11, 1973 Menasha Memorandum (MENFOX00000347)]; Ex. 192 [Nov. 22, 1977 Menasha PCB Test Program Document (MENFOX00001903)]; Ex. 193 [Dec. 20, 1977 Menasha Letter (MENFOX00001904)].

325. Even into the late 1970s, PCBs were still present in paperboard manufactured at the John Strange Mill at levels above 10 ppm. Menasha’s policy was that “[p]aperboard which analyzes under 10 parts/million PCB will be released for shipment. Paperboard testing over 10 parts/million PCB will be held and diverted to other end uses not requiring PCB compliance.” Roach Decl., Ex. 191 [Sep. 11, 1973 Menasha Memorandum (MENFOX00000347)]; Ex. 192 [Nov. 22, 1977 Menasha PCB Test Program Document (MENFOX00001903)]; Ex. 193 [Dec. 20, 1977 Menasha Letter (MENFOX00001904)]; Ex. 188 [Aug. 28/29, 1975 WDNR Hearing Transcript (NCR-FOX-0281394)].

326. Even after learning that recycling CCP would result in PCBs in mill effluent, Menasha continued discharging certain process and waste waters directly into the Fox River. Roach Decl., Ex. 194 [Aug. 10, 1971 Marathon Letter to Menasha (NCR-FOX-0248734)]; Ex. 195 [July 28, 1972 Menasha Letter to Neenah-Menasha Sewerage Commission (NCR-FOX-0248617)].

327. In 1971, the John Strange Mill had approximately 22 unmonitored outfalls that discharged directly into the Fox River. Roach Decl., Ex. 194 [Aug. 10, 1971 Marathon Letter to Menasha (NCR-FOX-0248734)].

328. In 1972, the John Strange Mill was still discharging approximately 1,324,000 gallons per day felt washing water (which contained approximately 2,824 pounds of suspended solids) directly to the Fox River. Roach Decl., Ex. 195 [July 28, 1972 Menasha Letter to Neenah-Menasha Sewerage Commission (NCR-FOX-0248617)].

329. After 1971, Menasha did not take reasonable, prudent or available steps to decrease the risk of further PCB contamination to the Lower Fox River. Roach Decl., Ex. 17 [June 4, 2009 Report of M. Williams at 105 - 112].

**E. U.S. Paper Mills Corp.**

330. By 1971, it was generally known within the paperboard packaging industry that PCBs were previously used in the manufacture of CCP. Roach Decl., Ex. 108 [September 28, 1971 News Release from BRDA (MENFOX00001723)].

331. U.S. Paper was a member of the paperboard industry, and manufactured paperboard products. Roach Decl., Ex. 196 [J. Patterson Dep. at 43:12-18, 106:21 – 107:4].

332. U.S. Paper claims that it “never” learned that CCP contained PCBs. USP Motion for Summary Judgment (Dkt. #551) pp. 6-7.

333. Richard Keyser, a former employee at the De Pere Mill, testified that he learned about PCB contamination of the Fox River in the 1970s. Roach Decl., Ex. 197 [R. Keyser Dep. at 95:14 – 96:16].

334. For at least some period of time in the late 1960s to early 1970s, the De Pere Mill specifically purchased CCP broke to use in the manufacture of its white paper. Roach Decl., Ex. 98 [February 8, 2007 Supplemental Response of U.S. Paper Mills Corp. to Information Request of United States Department of the Interior, Fish and Wildlife Service of 1996 (Exhibit 253 to R. Gerbers Deposition), pp. 2-6].

335. A former employee at the mill recalled up to 30 to 40 bales of CCP broke being delivered to the mill per week. Roach Decl., Ex. 98 [February 8, 2007 Supplemental Response of U.S. Paper Mills Corp. to Information Request of United States Department of the Interior, Fish and Wildlife Service of 1996 (Exhibit 253 to R. Gerbers Deposition), p. 3], Ex. 198 [T. Van Deurzen Dep. at 47:13 – 49:2].

336. James Patterson was assistant superintendent and superintendent of the De Pere Mill in the 1970s. In those positions, Mr. Patterson was involved with the purchased of Recovered Fiber used at the De Pere Mill. Roach Decl., Ex. 196 [J. Patterson Dep. at 45:23 – 46:1].

337. Mixed Paper was one of the four major grades of Recovered Fiber recycled at the De Pere Mill. Roach Decl., Ex. 196 [J. Patterson Dep. at 43:24–45:11]; Ex. 117 [T. Olson Dep. at 27:3–28:1].

338. U.S. Paper recycled Mixed Paper at the De Pere Mill throughout the 1970s and 1980s. Roach Decl., Ex. 199 [1971-1972 Grades of Paper Stock and Rag Used by U.S. and Canadian Mills (NCR-FOX-0600711)]; Ex. 200 [1984 Recovered Paper Usage (USPFOX00000670)]; Ex. 201 [B. Merline Dep. at 43:1-11, 85:11–87:2].

339. U.S. Paper never stopped recycling Mixed Paper at the De Pere Mill because of PCBs in CCP. Roach Decl., Ex. 199 [1971-1972 Grades of Paper Stock and Rag Used by U.S. and Canadian Mills (NCR-FOX-0600711)]; Ex. 200 [1984 Recovered Paper Usage (USPFOX00000670)]; Ex. 201 [B. Merline Dep. at 43:1-11, 85:11–87:2].

340. U.S. Paper did not meaningfully inspect or screen incoming Recovered Fiber for CCP. Roach Decl., Ex. 104 [July 10, 2009 Report of C. Klass at 17-20 (“[n]o feasible mechanism . . . in the 1970s or 1980s to remove PCB-containing NCR-brand carbonless copy paper from post-consumer wastepaper grades.”)]; Ex. 196 [J. Patterson Dep. at 60:18–63:2; 64:3-14].

341. Only one witness, Richard Gerbers, recalls a “blender test” being used to determine whether a given bale contained CCP. Roach Decl., Ex. 202 [R. Gerbers Dep. at 42:21–46:11].

342. Mr. Gerbers never performed the test himself, and testified that the test was rarely performed. Roach Decl., Ex. 202 [R. Gerbers Dep. at 46:10-11].

343. Mr. Patterson, who supervised Mr. Gerbers' direct supervisor, and who actually recalled performing the "blender test," testified that the test was never used to test for CCP, and that it was used only to test for recovered fiber that had "wet strength." Roach Decl., Ex. 202 [R. Gerbers Dep. at 10:7-10; 103:15-18]. Ex. 196 [J. Patterson Dep. at 60:18-63:2; 64:3-14].

344. Prior to 1971, the only wastewater treatment used at the De Pere Mill were two settling lagoons that discharged directly to the Lower Fox River. Roach Decl., Ex. 140 [August 7, 2009 Report of J. Braithwaite at 22-23].

345. Prior to 1971, there were instances where the settling lagoons would erode to the point where wastewater would be discharged without treatment directly to the Lower Fox River. Roach Decl., Ex. 203 [July 25, 1955 Letter from Wisconsin Board of Health (GLTFOX00001352)].

346. Even after 1971, when the De Pere Mill connected to the De Pere POTW, U.S. Paper on occasion diverted wastewater to lagoons that were known to overflow directly into the Lower Fox River. K. Roach Decl., Ex. 201 [Merline Dep. at 65:17-66:19]; Ex. 98 [Suppl. Response of U.S. Paper to Information Request of U.S. Department of Interior, Gerbers Exhibit 253, p. 3].

347. U.S. Paper's continued use of its settling lagoons after it hooked up to the De Pere POTW in 1971 was not reasonable or prudent behavior. K. Roach Decl., Ex. 204 [R. Fulk Dep. at 120:12-121:5].

348. U.S. Paper was not permitted to discharge wastewater from its lagoons.

349. During the 1970s, U.S. Paper did not take reasonable, prudent or available actions to lower the risk of further PCB contamination to the Lower Fox River. Roach Decl., Ex. 17 [June 4, 2009 Report of M. Williams at 112 - 118].

**F. Riverside Paper Company (Predecessor of CBC Coating, Inc.)**

350. The Riverside Paper Company (Riverside) knew by March 1972 that PCBs had been used in the manufacture of CCP. Roach Decl., Ex. 205 [March 13, 1972 Pioneer Paper Stock Letter (CBCFOX00003773)].

351. Riverside knew by March 1972 that “large stocks of old type PCB contaminated carbonless carbon paper exist throughout the country.” Roach Decl., Ex. 205 [March 13, 1972 Pioneer Paper Stock Letter (CBCFOX00003773)].

352. In the 1970s, Riverside recycled white and colored ledgers. Roach Decl., Ex. 206 [April 1, 1998 CBC Memorandum (Ex. 510-D to G. Holzkecht, Jr. Dep.)]; Ex. 207 [G. Holzkecht Jr. Dep. at 111:8 – 112:7]; Ex. 208 [May 8, 1974 Riverside Memorandum (CBCFOX00005693)].

353. Riverside purchased the Sorted Colored Ledger and Sorted White Ledger grades of recovered fiber from brokers. Roach Decl., Ex. 209 [L. Golper Dep. at 44:3-9, 61:8-19].

354. Between 1960 and December 1972, Riverside discharged all of its wastewater directly to the Lower Fox River with no treatment. Roach Decl., Ex. 210 [R. Farnum Dep. at 72:16 – 73:4].

355. In December 1972, Riverside began sending some of its wastewater to the City of Appleton Publicly-Owned Treatment Works for treatment. Roach Decl., Ex. 211 [Dec. 26, 1972 Letter from City of Appleton to Riverside (NCR-FOX-0004352)].

356. Even after Riverside began sending some of its wastewater to the City of Appleton publicly-owned treatment works for treatment, Riverside continued discharging some untreated wastewater directly to the Lower Fox River. Roach Decl., Ex. 207 [G. Holzkecht, Jr. Dep. at 189:2-5].

357. Riverside first detected Aroclor 1242 in its wastewater in 1974. Roach Decl., Ex. 212 [March 22, 1996 PCB Synopsis (Ex. 510-L G. Holzkecht, Jr. Dep.)]; Ex. 207 [G. Holzkecht, Jr. Dep. at 155:25 – 156:19].

358. Despite detecting PCBs in its wastewater in 1974, Riverside never tested its incoming recovered fiber for PCB-content. Roach Decl., Ex. 212 [March 22, 1996 PCB Synopsis (Ex. 510-L to G. Holzkecht, Jr. Dep.)]; Ex. 207 [G. Holzkecht, Jr. Dep. at 33:18-25, 155:25 – 156:19].

359. Riverside took no action to screen or limit the amount of PCB-containing CCP it took in. Roach Decl., Ex. 207 [G. Holzkecht, Jr. Dep. at 173:20-23]; Ex. 210 [R. Farnum Dep. at 111:4-15].

360. During the 1970s, Riverside did not take reasonable, prudent or available steps to minimize the risk of further PCB contamination to the Lower Fox River. Roach Decl., Ex. 17 [June 4, 2009 Report of M. Williams at 100 - 105].

**G. Wisconsin Tissue Mills, Inc. (Predecessor of the WTM I Company)**

361. WTM contends it did not know about PCBs in CCP until 1975. Roach Decl., Ex. 213 [WTM's Responses to NCR's First Set of Interrogatories at 5].

362. Wisconsin Tissue Mills, Inc. ("WTM") stated in 1975 that it knew that "many grades of waste paper have PCB's in them" due to CCP made prior to 1971 being included in recovered fiber streams. Roach Decl., Ex. 214 [Aug. 25, 1975 WTM Letter (WTMFOX00008907)].

363. WTM first began recycling CCP as early as 1956. Roach Decl., Ex. 215 [1996 WTM I 104(e) responses (NCR-FOX-479011)].

364. Between 1956 and 1978, the primary grades of recovered fiber used by WTM were Sorted Colored Ledger and Sorted White Ledger. Roach Decl., Ex. 215 [1996 WTM I 104(e) responses (NCR-FOX-479011)].

365. WTM purchased Sorted Colored Ledger from brokers. Roach Decl., Ex. 209 [L. Golper Dep. at 44:10-12].

366. WTM was recycling office waste as early as 1963, and continued to do so through at least 1975. Roach Decl., Ex. 216 [D. Conger Dep. at 32:2-3]; Ex. 217 [Sept. 1975 WTM Letter to Brokers, Exhibit 636 to D. Conger Deposition].

367. WTM began purchasing File Stock in the 1980s. Roach Decl., Ex. 218 [W. New Dep. at 110:23 – 111:5]; Ex. 219 [1984 WTM Cost & Tonnage report (NCR-FOX-0286568)].



368. In January 1976 WTM tested four grades of incoming recovered fiber and found PCBs in each grade tested. Roach Decl., Ex. 220 [Feb. 12, 1976 PCB Data (WTMFOX00009882)]; Ex. 216 [D. Conger Dep. at 98:9 – 99:21].

369. WTM found PCBs in each grade of recovered fiber tested in January 1976. Roach Decl., Ex. 220 [Feb. 12, 1976 PCB Data (WTMFOX00009882)]; Ex. 216 [D. Conger Dep. at 98:9 – 99:21, 148:13-20]; Ex. 218 [W. New Dep. at 146:21-147:12].

370. WTM did not stop purchasing any of the grades of recovered fiber tested in 1976. Roach Decl., Ex. 216 [D. Conger Dep. at 98:9 – 99:21, 148:13-20]; Ex. 218 [W. New Dep. at 146:21-147:12].

371. Prior to 1973, when it installed its own wastewater treatment plant, WTM sent its wastewater to the Neenah-Menasha Sewerage Commission with no pretreatment. Roach Decl., Ex. 216 [D. Conger Dep. at 55:18 – 56:10].

372. Prior to 1973, when it installed its own wastewater treatment plant, WTM knew that the Neenah-Menasha Sewerage Commission was “not capable of handling effluent.” Roach Decl., Ex. 218 [W. New Dep. at 53:12-16].

373. Prior to 1973, WTM would occasionally receive calls from the Neenah-Menasha Sewerage Commission saying “their operation was somehow either compromised or out of control and that [WTM] had to shut off flow to the Neenah-Menasha Sewerage Commission.” Roach Decl., Ex. 218 [W. New Dep. at 54:3-7, 55:14-18].

### **XIII. STATUTES AND REGULATIONS REGARDING THE USE AND RECYCLING OF PCBs OR PCB-CONTAINING PRODUCTS.**

374. The Toxic Substances Control Act (“TSCA”), 15 U.S.C. § 2601 *et seq.*, enacted in 1976, directed EPA to prohibit manufacturing, processing, distribution in commerce, and use of PCBs, after 1978 or 1979 (depending upon activity) unless EPA approved specific use authorizations or exemptions. Roach Decl., Ex. 221 [Aug. 24, 2009 Supplemental Rebuttal Report of M. Williams at 2].

375. In 1979, a use authorization for PCB-containing carbonless copy paper was approved pursuant to TSCA, but the authorization prohibited the manufacturing, processing and distribution of PCBs in commerce unless EPA had issued a specific use authorization. Roach Decl., Ex. 222 [May 31, 1979 Rule, 44 Federal Register 31514 (MONSFOX00008510)].

376. In 1979, the American Paper Institute petitioned the EPA for a class exemption to permit the recycling of PCB-containing paper. Roach Decl., Ex. 221 [Aug. 24, 2009 Supplemental Rebuttal Report of M. Williams at 2].

377. EPA did not authorize the recycling of paper containing PCBs until 1984, when it acted on the American Paper Institute’s petition for a specific use authorization, and also imposed a discharge limit of 3 ppb. Roach Decl., Ex. 223 [July 10, 1984 Rule, 49 Federal Register 28172 (GPFOX00102564)]; Ex. 221 [Aug. 24, 2009, Supplemental Rebuttal Report of M. Williams at 3].

378. Throughout the 1970s and 1980s, a number of Defendants routinely exceeded the 3 ppb PCB discharge limit set by EPA. K. Roach Decl., Ex. 226 [Summary of Department Hearings to Consider Effluent Standards for PCBs Held on August 28-29, 1975 (NCR-FOX-475447) at NCR-FOX-475448)]; Ex. 227 [NR 101 Summary Report (NCR-FOX-0328207)].

379. In 1988, EPA limited PCB discharges from recyclers to either 3 ppb or an equivalent mass discharge amount, in part because EPA recognized that most local governments were imposing limits stricter than 3 ppb. Roach Decl., Ex. 224 [June 27, 1988 Rule, 53 Federal Register 24206 (NCR-FOX-0574353)]; Ex. 225 [July 8, 1987 Proposed Rule, 52 Federal Register 25838 (NCR-FOX-0574330)]; Ex. 221 [Aug. 24, 2009, Supplemental Rebuttal Report of M. Williams at 4].

380. In considering whether to allow recycling of paper containing PCBs, the government sought to promote recycling and limit PCB releases to waterbodies, “EPA looked for solutions *that maximized both goals* to the extent practicable. EPA did not see this as a trade-off since neither goal eclipsed the other.” Roach Decl., Ex. 221 [Aug. 24, 2009, Supplemental Rebuttal Report of M. Williams at 1].

381. During state hearings held in 1975 to consider prohibiting the discharge of PCBs in effluent or limiting PCB discharges to 5 ppb, WDNR official Stanton Kleinert stated that most pulp and paper mills which recycle papers are discharging less than 5 ppb PCBs. K. Roach Decl., Ex. 226 [Summary of Department Hearings to Consider Effluent Standards for PCBs Held on August 28-29, 1975 (NCR-FOX-475447) at NCR-FOX-475448)].

382. In 1975, WDNR official Stanton Kleinert noted that PCB discharges from Bergstrom and Fort Howard were “exceeding 5 ppb in most samples.” K. Roach Decl., Ex. 226 [Summary of Department Hearings to Consider Effluent Standards for PCBs Held on August 28-29, 1975 (NCR-FOX-475447) at NCR-FOX-475448)].

383. In 1975, WDNR praised a recycling mill, the Sterling Mill of the Brown Paper for having PCB levels well below 5 ppb, despite using 100 percent recycled fiber, and noted its

“outstanding wastewater treatment system with exceptional solids removal.” K. Roach Decl., Ex. 226 [Summary of Department Hearings to Consider Effluent Standards for PCBs Held on August 28-29, 1975 (NCR-FOX-475447) at NCR-FOX-475448)].

384. Most defendants, including Bergstrom, had inadequate wastewater treatment to control the discharge of PCBs to the Lower Fox River. Roach Decl., Ex. 140 [Aug. 7, 2009 Report of J. Braithwaite at 6, 15-20].

385. There is no evidence that NCR recycled any PCB-containing CCP broke.

386. Fort Howard’s actions after 1972 contributed additional PCBs to the Lower Fox River at a time when governmental entities were trying to reduce all new loadings of PCBs to the river. Roach Decl., Ex. 17 [June 4, 2009 Report of M. Williams at 85].

387. Neenah Menasha Sewerage Commission delayed bringing its treatment system into compliance with state standards and this delay allowed untold millions of pounds of PCB containing suspended solids to be discharged into the Fox River. Roach Decl., Ex. 140 [Aug. 7, 2009 Report of J. Braithwaite at 28].

388. Even as late as 1985, when it was *still* discharging “40-50 lbs. [of PCBs] per year” into the Fox River, Fort Howard publicly maintained that, “[a] closer examination of the PCB issue leads one to conclude that they are not as dangerous as some people believe.” Roach Decl., Ex. 251 [Closing Remarks by D. DeMeuse (GPFOX00016084), at p. 7].

389. At a WDNR hearing on PCBs, the Wisconsin Paper Council, a paper trade organization to which several Defendants belonged, testified:

Aroclor 1242 used in the manufacture of carbonless copy paper has significantly different structural constituent characteristics, whereby its stability and persistence are less and its degradability appears to be significantly higher than its comparatively more highly chlorinated Aroclor relatives . . . [B]ased on studies reviewed by us, it is not Aroclor 1242, the carbonless paper Aroclor, which has commonly been found in large concentrations in commercial fish.

Roach Decl., Ex. 64 [August 28-29, 1975 WDNR Hearing Transcript (NCR-FOX-0096936)].

390. In April 1972, an article in Environmental Health Perspectives acknowledged that there continued to be significant gaps in knowledge concerning PCBs and the environment: “Evaluation of the long-term effects of the accumulation of PCBs and of the change in use patterns and production will require the development of environmental transport models more sophisticated than those currently in use, together with the requisite data.” Roach Decl., Ex. 252 [April 1972 Article in Environmental Health Perspectives (NCR-FOX-372820), at p. 34].

Respectfully submitted,

APPLETON PAPERS INC.

NCR CORPORATION

/s/ Michael L. Hermes

/s/ Kathleen L. Roach

Counsel for Appleton Papers Inc.:

Michael L. Hermes  
HERMES LAW LTD.  
333 Main Street, Suite 601  
Green Bay, Wisconsin 54301  
(920) 436-9870  
Fax: (920) 436-9871

Counsel for NCR Corporation:

Kathleen L. Roach (Illinois Bar No. 6191432)  
SIDLEY AUSTIN LLP  
One South Dearborn Street  
Chicago, Illinois 60603  
(312) 853-7000  
Fax: (312) 853-7036

Ronald R. Ragatz  
DEWITT ROSS & STEVENS S.C.  
2 E. Mifflin Street, Suite 600  
Madison, Wisconsin 53703  
(608) 255-8891  
Fax: (608) 252-9243

J. Ric Gass (Wisconsin Bar No. 1011998)  
GASS WEBER MULLINS LLC  
309 North Water Street  
Milwaukee, Wisconsin 53202  
(414) 224-7697  
Fax: (414) 224-6116

September 30, 2009

### **CERTIFICATE OF SERVICE**

I hereby certify that on September 30, 2009, I electronically filed **Plaintiffs' [Proposed] Findings of Fact and Conclusions of Law** using the ECF system, which will send notification of such filing to: Philip Munroe at DiRenzo & Bomier LLC, [pmunroe@direnzollc.com](mailto:pmunroe@direnzollc.com); Scott Fleming at Weiss Berzowski Brady LLP, [sbf@wbb-law.com](mailto:sbf@wbb-law.com); David Mandelbaum at Ballard Spahr Andrews & Ingersoll, LLP, [mandelbaum@ballardspahr.com](mailto:mandelbaum@ballardspahr.com); Marc Davies at Ballard Spahr Andrews & Ingersoll, LLP, [davies@ballardspahr.com](mailto:davies@ballardspahr.com); Ronald Varnum at Ballard Spahr Andrews & Ingersoll, LLP, [varnumr@ballardspahr.com](mailto:varnumr@ballardspahr.com); Sabrina Mizrachi at Ballard Spahr Andrews & Ingersoll, LLP, [mizrachis@ballardspahr.com](mailto:mizrachis@ballardspahr.com); Monique Mooney at Ballard Spahr Andrews & Ingersoll, LLP, [mooney@ballardspahr.com](mailto:mooney@ballardspahr.com); Caleb Holmes at Ballard Spahr Andrews & Ingersoll, LLP, [holmescj@ballardspahr.com](mailto:holmescj@ballardspahr.com); Patrick Zaepfel at Kegel Kelin Almy & Grimm, LLP, [zaepfel@kkaglaw.com](mailto:zaepfel@kkaglaw.com); Mark Feldmann at Menn Law Firm, Ltd., [mark-feldmann@mennlaw.com](mailto:mark-feldmann@mennlaw.com); Joseph Beisenstein at Menn Law Firm, Ltd., [joseph-beisenstein@mennlaw.com](mailto:joseph-beisenstein@mennlaw.com); Philip Hunsucker at Hunsucker Goodstein & Nelson PC, [phunsucker@hgnlaw.com](mailto:phunsucker@hgnlaw.com); David Rabbino at Hunsucker Goodstein & Nelson PC, [drabbino@hgnlaw.com](mailto:drabbino@hgnlaw.com); Christopher Dow at Hunsucker Goodstein & Nelson PC, [cdow@hgnlaw.com](mailto:cdow@hgnlaw.com); Allison McAdam at Hunsucker Goodstein & Nelson PC, [amcadam@hgnlaw.com](mailto:amcadam@hgnlaw.com); Eric Mroz at Hunsucker Goodstein & Nelson, P.C., [mroz@hgnlaw.com](mailto:mroz@hgnlaw.com); David Edquist at von Briesen & Roper, s.c., [dedquist@vonbriesen.com](mailto:dedquist@vonbriesen.com); Christopher Riordan at von Briesen & Roper, s.c., [criordan@vonbriesen.com](mailto:criordan@vonbriesen.com); Patrick Wells at von Briesen & Roper, s.c., [pwells@vonbriesen.com](mailto:pwells@vonbriesen.com); Russell Wilson at Ruder Ware, [rwilson@ruderware.com](mailto:rwilson@ruderware.com); Linda Benfield at Foley & Lardner LLP, [lbenfield@foley.com](mailto:lbenfield@foley.com); Sarah Slack at Foley & Lardner LLP, [sslack@foley.com](mailto:sslack@foley.com); Charles Gering at Foley & Lardner LLP, [cgering@foley.com](mailto:cgering@foley.com); Michelle Gale

at Dykema Gossett PLLC, [mgale@dykema.com](mailto:mgale@dykema.com); Joseph Basta at Dykema Gossett PLLC, [jbasta@dykema.com](mailto:jbasta@dykema.com); Daniel Murray at Johnson & Bell, Ltd., [murrayd@jbltd.com](mailto:murrayd@jbltd.com); Garrett Boehm, Jr. at Johnson & Bell, Ltd., [boehmg@jbltd.com](mailto:boehmg@jbltd.com); Frederick Mueller at Johnson & Bell, Ltd., [muellerf@jbltd.com](mailto:muellerf@jbltd.com); John Cermak, Jr. at Baker & Hostetler LLP, [jcermak@bakerlaw.com](mailto:jcermak@bakerlaw.com); Sonja Inglin at Baker & Hostetler LLP, [singlin@bakerlaw.com](mailto:singlin@bakerlaw.com); Timothy Anderson at Remley & Sensenbrenner, S.C., [tanderson@remleylaw.com](mailto:tanderson@remleylaw.com); Thomas O'Donnell at Calfee Halter & Griswold LLP, [todonnell@calfee.com](mailto:todonnell@calfee.com); William Coughlin at Calfee Halter & Griswold LLP, [wcoughlin@calfee.com](mailto:wcoughlin@calfee.com); Ted Waskowski at Stafford Rosenbaum LLP, [twaskowski@staffordlaw.com](mailto:twaskowski@staffordlaw.com); Richard Yde at Stafford Rosenbaum LLP, [ryde@staffordlaw.com](mailto:ryde@staffordlaw.com); Meg Vergeront at Stafford Rosenbaum LLP, [mvergeront@staffordlaw.com](mailto:mvergeront@staffordlaw.com); Lora L. Zimmer at Hinshaw & Culbertson LLP, [lzimmer@hinshawlaw.com](mailto:lzimmer@hinshawlaw.com); William Mulligan at Davis & Kuelthau, s.c., [wmulligan@dkattorneys.com](mailto:wmulligan@dkattorneys.com); Kevin Lyons at Davis & Kuelthau, s.c., [klyons@dkattorneys.com](mailto:klyons@dkattorneys.com); Tara Mathison at Davis & Kuelthau, s.c., [tmathison@dkattorneys.com](mailto:tmathison@dkattorneys.com); Elizabeth Miles at Davis & Kuelthau, s.c., [emiles@dkattorneys.com](mailto:emiles@dkattorneys.com); Thomas Schrimpf at Hinshaw & Culbertson LLP, [tschrimpf@hinshawlaw.com](mailto:tschrimpf@hinshawlaw.com); Paul Kent at Anderson & Kent, S.C., [pkent@andersonkent.com](mailto:pkent@andersonkent.com); Waltraud Arts at Anderson & Kent, [warts@andersonkent.com](mailto:warts@andersonkent.com); James P. Walsh at the Appleton City Attorney's Office, [jim.walsh@appleton.org](mailto:jim.walsh@appleton.org); Ian Pitz at Michael Best & Friedrich, LLP, [iapitz@michaelbest.com](mailto:iapitz@michaelbest.com); Allison Swanson at the City of Green Bay, [allisonsw@ci.green-bay.wi.us](mailto:allisonsw@ci.green-bay.wi.us); Ted Warpinski at Friebert, Finerty & St. John, S.C., [taw@ffsj.com](mailto:taw@ffsj.com); S. Todd Farris at Friebert, Finerty & St. John, S.C., [stf@ffsj.com](mailto:stf@ffsj.com); M. Andrew Skwierawski at Friebert, Finerty & St. John, S.C., [mas@ffsj.com](mailto:mas@ffsj.com); Scott Hansen at Reinhart Boerner Van Deuren s.c., [shansen@reinhartlaw.com](mailto:shansen@reinhartlaw.com); Steven Bogart at Reinhart Boerner Van Deuren s.c.,

[sbogart@reinhardtlaw.com](mailto:sbogart@reinhardtlaw.com); John Van Lieshout at Reinhart Boerner Van Deuren s.c.,  
[jvanlieshout@reinhardtlaw.com](mailto:jvanlieshout@reinhardtlaw.com); David Frank at Reinhart Boerner Van Deuren s.c.,  
[dfrank@reinhardtlaw.com](mailto:dfrank@reinhardtlaw.com); Thomas Gottshall at Haynsworth Sinkler Boyd, P.A.,  
[tgottshall@hsblawfirm.com](mailto:tgottshall@hsblawfirm.com); Stephen McKinney at Haynsworth Sinkler Boyd, P.A.,  
[smckinney@hsblawfirm.com](mailto:smckinney@hsblawfirm.com); William Harbeck at Quarles & Brady LLP, [whh@quarles.com](mailto:whh@quarles.com);  
David Strifling at Quarles & Brady, LLP, [dstrifli@quarles.com](mailto:dstrifli@quarles.com); Nancy Peterson at Quarles &  
Brady LLP, [nkp@quarles.com](mailto:nkp@quarles.com); Susan Lovern at von Briesen & Roper, s.c.,  
[slovern@vonbriesen.com](mailto:slovern@vonbriesen.com); Thomas Armstrong at von Briesen & Roper, s.c.,  
[tarmstro@vonbriesen.com](mailto:tarmstro@vonbriesen.com); Michael P. Carlton at von Briesen & Roper, s.c.,  
[mcarlton@vonbriesen.com](mailto:mcarlton@vonbriesen.com); Kelly Noyes at von Briesen & Roper, s.c., [knoyes@vonbriesen.com](mailto:knoyes@vonbriesen.com);  
Arthur Foerster at Latham & Watkins LLP, [Arthur.Foerster@lw.com](mailto:Arthur.Foerster@lw.com); Margrethe Kearney at  
Latham & Watkins LLP, [Margrethe.Kearney@lw.com](mailto:Margrethe.Kearney@lw.com); Mary Rose Alexander at Latham &  
Watkins LLP, [Mary.Rose.Alexander@lw.com](mailto:Mary.Rose.Alexander@lw.com); Ernest Getto at Latham & Watkins LLP,  
[Ernie.Getto@lw.com](mailto:Ernie.Getto@lw.com); Karl Lytz at Latham & Watkins LLP, [Karl.Lytz@lw.com](mailto:Karl.Lytz@lw.com); Andrea Hogan  
at Latham & Watkins LLP, [Andrea.Hogan@lw.com](mailto:Andrea.Hogan@lw.com); Nathan Fishbach at Whyte Hirschboeck  
Dudek S.C., [nfishbach@whdlaw.com](mailto:nfishbach@whdlaw.com); Jan Conlin at Robins, Kaplan, Miller & Ciresi L.L.P.,  
[jmconlin@rkmc.com](mailto:jmconlin@rkmc.com); Sarah Lindsey at Warner Norcross & Judd LLP, [slindsey@wnj.com](mailto:slindsey@wnj.com);  
Steven Kohl at Warner Norcross & Judd LLP, [skohl@wnj.com](mailto:skohl@wnj.com); Thomas Andreoli at  
Sonnenschein Nath & Rosenthal LLP, [tandreoli@sonnenschein.com](mailto:tandreoli@sonnenschein.com); Matthew Adams at  
Sonnenschein Nath & Rosenthal LLP, [madams@sonnenschein.com](mailto:madams@sonnenschein.com); Robin Jacobs at Cook &  
Franke, S.C., [jacobs@cf-law.com](mailto:jacobs@cf-law.com); Randall Stone at U.S. Department of Justice,  
[randall.stone@usdoj.gov](mailto:randall.stone@usdoj.gov); Joshua Levin at U.S. Department of Justice, [joshua.levin@usdoj.gov](mailto:joshua.levin@usdoj.gov);  
Matthew R. Oakes at U.S. Department of Justice, [matthew.oakes@usdoj.gov](mailto:matthew.oakes@usdoj.gov); Perry Rosen at



U.S. Department of Justice, [perry.rosen@usdoj.gov](mailto:perry.rosen@usdoj.gov); Michael Hermes at Hermes Law, Ltd., [mlh@hermeslawltd.com](mailto:mlh@hermeslawltd.com); Brandon Evans at Hermes Law, Ltd., [bje@hermeslawltd.com](mailto:bje@hermeslawltd.com); Anthony Steffeck at Hermes Law, Ltd., [ajs@hermeslawltd.com](mailto:ajs@hermeslawltd.com); Heidi D. Melzer at Hermes Law, Ltd., [hdm@hermeslawltd.com](mailto:hdm@hermeslawltd.com); Dennis Birke at DeWitt Ross & Stevens S.C., [db@dewittross.com](mailto:db@dewittross.com); Ronald Ragatz at DeWitt Ross & Stevens S.C., [rrr@dewittross.com](mailto:rrr@dewittross.com); Megan Senatori at DeWitt Ross & Stevens S.C., [ms@dewittross.com](mailto:ms@dewittross.com); J. Ric Gass at Gass Weber Mullins LLC, [gass@gasswebermullins.com](mailto:gass@gasswebermullins.com) David Turek at Gass Weber Mullins LLC, [turek@gasswebermullins.com](mailto:turek@gasswebermullins.com).

NCR CORPORATION

s/ Kathleen L. Roach  
By: One of Its Attorneys